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COEXISTENT PRODUCTION CONCENTRATION, DIFFERENTIATION URGED

East Berlin WIRTSCHAFTSWISSENSCHAFT in German Vol 34 No 7, Jul 86 (signed to press 15 May 86) pp 973-989

[Article by Dr Franz Rudolph, deputy director of the Institute for Socialist Business Administration/Foreign Trade at the "Bruno Leuschner" College for Economics in East Berlin: "Developmental Trends in the Socialization Process and Its Planned Structuring in the Combines"]

[Text] At the Eleventh SED Party Congress, Erich Honecker estimated that the combines had become the "backbone of the GDR's planned economy. In industry and construction, transportation and telecommunications as well as in district managed industry they have operated satisfactorily as the modern form of the management of large-scale socialist production in the conditions of intensification."(1)

The combine represents the creation of a standardized type of large socialist economic organizations, characterized by general qualitative features and a basic material as well as business organizational structure. Conforming to historical developments and sophisticated reproduction conditions and requirements, these structures vary from combine to combine. It is true, though, to say of all of them that their evolution and standard of socialization are crucially determined by the emergence of a relatively integrated reproduction process. All organizational measures such as the division of labor, cooperation, specialization and concentration, must therefore be based on the entire reproduction process, the development of its material structure and internal proportionality. The development of the basic material and business organizational structure of the combines is geared on the one hand to the expansion of the material prerequisites required for efficient circulation from research via production to sales. Needed also, on the other hand, is the proportioning and division of labor in and among the capacities, so that the total process may be carried on quickly and as well as possible. Attention must therefore focus on the creation of concrete modern productive forces as well as modern specialization and cooperation in the combine.

The socialization of production in the combines is essentially a process of the dialectic interaction between productive forces and production conditions. Here we are directly confronted with the active role of socialist production conditions, their operation as the motive force of the social productive

forces. In the final analysis we are concerned with the task--formulated by Lenin--of "in actual fact socializing production." (2) It is therefore necessary so to organize the combines as the concentrated form of socialist property as to make the higher standard of socialization the source of economic efficiency. "The combination of science and technology with all factors of intensively expanded reproduction has turned out to be the decisive link in the chain within the combines' circulation." (3)

Science and technology assume an increasingly active role in the socialization process. As a result not only are specific processes speeding up, the criteria are changing for many relations, structures, dimensions and developmental trends. This also means that new forms of concentration, specialization, combination and cooperation are manifesting themselves, while many earlier notions are losing their usefulness.

The speed-up of scientific-technological advances, for example, more and more frequently gives rise to tasks that transcend single industries. That specially applies to basic innovations, in other words innovations based on fundamentally new perceptions with regard to the natural sciences. One of the most topical examples is the development of a new process by the joint research efforts of the Leuna Combine and the pulp and paper industry. In addition to utilization by the paper industry, the new product concerned is used by the cosmetics industry, the film industry and geology. As the mastery of complex innovation processes needs to be organized within the combines, combines are no longer a mere part of an industry. Instead they are now elements of the national reproduction processes and increasingly transcend the limitations of a single industry.

The speed-up of scientific-technological progress is inseparable from the program of more advanced processing and the planned perfection of the production structure. The fundamental developmental trend consists in the fact that the capacity of the national economy is increasingly decided by industries that embody the progress of science and technology to a particularly large extent. It is imperative for each combine so to organize its production profile and product range as to ensure their full consonance with this national structural development. When combines increasingly have the ability to intensively expand the reproduction process by their own resources, the dynamism of the production structure also proceeds within these economic units. The social organization of production must therefore be perfected in a manner likely to improve the responsive capacity of the combine as a whole.

The greater responsive capacity of the combines is required also for making prevail the greater market and customer orientation of the entire reproduction process. "Changes on external markets are often not predictable as to trends and dimensions and therefore require a faster response to changed demand." (4) The guarantee of the greatest possible flexibility includes the ability to rapidly convert production and early spot new trends. That, in turn, depends on the resolute attitude of the manager, the standard of analyses, manpower resources, the flexibility of fixed assets, flexible forms of production organization, the availability of reserves, and so on.

Eventually all specialization, concentration, combination and cooperation must contribute to the improvement of the combines' overall efficiency. This concerns primarily the needed growth of labor productivity but also such objectives as a great deal of flexibility, lower freight costs, the improvement of materials and fixed asset management. These objectives may well clash, and it is therefore imperative always to keep in mind their contribution to the improvement of efficiency. The deepening of the division of labor in production, for example, must not result in rising freight costs, thereby increasing total costs. We must also prevent the rationalization of management relations being responsible for a loss of initiative and flexibility. Genuine economic progress is ultimately revealed only in the ratio of total costs to profit (total costs including both recurring and nonrecurring costs).

Starting from a complex consideration of efficiency and concrete reproduction conditions, the following topical criteria and conditions of social production organization should be emphasized:

1. All measures aimed at deepening the division of labor must be carried out from the aspect of the combine as a whole. This means that the entire reproduction process needs to be considered, not just the stage of production. For individual combine enterprises this may mean that their rate of development may be substantially above or below the average, or that their production profile and status in the combine may change significantly.

2. The key issues of further specialization, concentration and cooperation must derive from the main lines of scientific-technological progress and market requirements. This involves mainly the ascertainment and consideration of concrete effects on the optimum production series, the skills of the working people, cooperation relations with other combines, and so on. The following general orientations in particular should be emphasized with regard to the various developmental trends of the combines' material structure: The growing dynamism of the production structure, the expansion and sophistication of the product range, the growing share in total costs of production preparation and realization, the further verticalization of production.

3. The significantly greater demands on the responsive capacity of the combines and their managements can be met only if the material structure also is organized in accordance with these criteria. Of service in this connection are the internal production of product determining components, the introduction of flexible production and labor organization, the creation of a demand appropriate ratio of large series and special production, the improvement of the flexibility of fixed assets and the availability of reserves.

4. It is more important than ever to take account of freight costs when dealing with specialization and the organization of cooperation relations. The reduction of inefficient cooperation relations represents an important tool for lowering existing freight costs. Substantial savings are possible by the use of methods for transport optimization. Prior to all this, though, it is imperative to fundamentally analyze and optimally organize specialization relations.

5. Nowadays materials and fixed asset management enjoys far greater significance for the social organization of production. The complex utilization of materials and raw materials is often far more efficient than one-sided product specialization. The greater capacity utilization of highly productive equipment also often calls for the expansion of the production profile or the co-use of the plant by other enterprises.

Differentiation of Production--An Objective Process

At the SED CC seminar with the general directors of combines and CC party organizers of 7 March 1985, Guenter Mittag said it was a fact that the diversity of products and technologies would keep on increasing. This clearly signified "that the process of the socialization of production does not proceed unilaterally in the direction of specialization but rather in that of the combination of production. After all, that has been one of the main reasons for the establishment of combines as efficient economic units."(5) The product range had lately substantially broadened in almost all combines. The increasing demand appropriateness of production necessarily resulted in growing sophistication, the increasing diversity of products and technologies. In many cases the current high speed was also the result of specific causes. This must not be taken to mean that this process is ephemeral. The study of longer periods of time clearly showed that the differentiation of production or "growing diversity" represented an inevitable process of the progress of productive forces.

The development of the productive forces is not reflected only in the rising productivity of existing operations but also and mainly in the "production of new needs and the discovery and creation of new use values."(6) This "at one and the same time steadily multiplies, diversifies and within itself more and more differentiates the circle of the qualitative differences of labor."(7)

All elements of production are ultimately affected by differentiation. The processing of new materials requires special production tools and technologies. "The trades producing the working tools are more and more differentiated alongside the differentiation of the tools themselves."(8)

Just like the division of labor and the other basic forms of the socialization process, this growing diversity is intimately linked with the further development of the productive forces, in particular the progress of science and technology. It is evident that "entirely new production branches and, therefore, new work fields"(9) arise primarily as the result of basic innovation, in other words by qualitatively new scientific-technological discoveries. An illuminating example is furnished by the current development of microelectronics. This is not only a new and rapidly growing industry, it has also spawned other new industries and processes such as micromechanics and logic analysis. The more scientific-technological advances speed up, the more rapidly do we get a "multiplication of the use value of labor," so that production "steadily and necessarily produces the unlimited diversity of branches of work, in other words the most multilateral wealth of form and content of production, subjecting to it all aspects of nature."(10)

The differentiation of production is therefore not just a special kind of division of labor. Indeed it is a basic process of the development of productive forces and profoundly affects socialization and its manifestations. As the socialization process in the most general meaning represents the interaction of the division and combination of labor, the differentiation of production first of all results in new forms of their integration. The development of this relationship is also dialectic in nature. In other words, at a certain point progressive and speedier differentiation gives rise to new criteria and trends of concentration. At the same time, the growing diversity of production increasingly compels the deepening of international specialization and cooperation.

The differentiation process is already plainly revealed in the example of materials for processing, in particular the development of raw materials and other materials. Only 19 chemical elements were in daily use before the 18th Century, 28 in the 18th Century, 50 in the 19th Century and 60 at the beginning of the 20th Century. We may now expect almost all 104 known elements to be included in the production process in the foreseeable future. The development of the use of metals proceeded along similar lines. While only 7 metals were used for technical ends in the 17th Century, their number had risen to 17 at the beginning of the 20th Century and to more than 50 by the end of the 1950's. This development was directly linked to the main trends of scientific-technical progress. Let me just remind you of such metals as titanium, germanium or silicon as well as the development of electrical engineering and electronics. The process of differentiation is even more evident in the utilization of synthetics such as plastics or metal alloys--ranging from bronze to some thousands of varieties in our age.

The differentiation of raw materials and other materials is the result not only of the discovery of new materials but also of the more extensive and diversified use of long familiar materials. Wood chemistry, for example, now opens up new possibilities for the use of one of mankind's oldest raw materials. "Exploration of the earth in every direction, for discovering new and useful objects as well as new uses for the old ones such as previously unknown aspects of the latter to qualify them as raw materials, and so on"(11) therefore neither displaces nor replaces well known materials. In general, new materials are added to the familiar substances. The system of materials for processing is expanded and their productive utilization becomes more specific.

The expansion and specification of materials for processing is necessarily linked with the development of equipment and technologies. The development of synthetic fibers, for instance, facilitated the production of many new and improved products. At the same time, this production required entirely new machines and equipment for the chemical and textile industries. However, the manufacture of machines for synthetic fibers by the textile machine construction industry does not supersede that of machines to handle natural fibers. Nor are existing technologies normally displaced by new processes. Instead the technological possibilities for the manufacture of a product are expanded and present themselves in changed proportions. In the manufacture of textile fabrics, for example, classic weaving technology has been joined by

some other processes that, in turn, are specialized in many subsidiary classifications. Weaving technology was not replaced thereby, indeed it experienced further perfection and differentiation.

The experiences gained by the Textima Combine are evidence of the fact that these phenomena are of more than theoretical or historical interest and actually have definite and immediate practical implications. Many international producers of textile machinery held for the longest time that no significant rise in productivity could be expected any longer in the weaving process as a classic textile technology. The Textima Combine also concentrated research and development on new processes and produced outstanding innovations by its Malimo and Liropol. At the same time, though, the combine realized that these were not able to simply replace weaving.

Following systematic research in cooperation with the USSR, the multiphase weaving machine arose, a new and more productive kind of weaving technology.

The process of differentiation is at its most evident in the expansion of the product range, in other words the growing diversity of products. Here also the contemplation of longer periods of time serves to illuminate the objective nature of this fact. In 1850, for instance, the international range of optical precision device construction consisted of four product groups, subdivided into eighteen principal appliances. By 1975 the assortment had expanded to 11 product group and 371 principal appliances. This means that seven new product groups were added, while the numbers of principal appliances per product group rose from around four to some thirty-four. The greatest expansion, however, evidently occurred in the variants of the principal devices.

Another useful example is the expansion of the product range of the Electrical Machine Construction Combine. Since the first industrial use of the electric motor, about 100 years ago, the diversity of this product has developed with uncommon speed. The combine now manufactures 8 million electric motors of 100,000 different types. The output of these types ranges from 1 watt to 16 megawatt and the weight from a few grams to more than 100 tons. If we also take modifications in account, the partial assortment of asynchronous low-voltage machines includes 40,000-50,000 types. Much the largest proportion of the output of electric motors is used as components by the electric engineering/electronics industry and the machine and vehicle construction industries. As these industries are preeminent in speeding scientific-technological progress, their dynamism directly affects the development of the combine's product range. At the present time, the expansion of microelectronics in particular involves an enormous jump in the demand for new types of electric motors. Just as the differentiation of production represents a general inevitability, the current extremely high rate of speed is linked mainly to the transition to intensively expanded reproduction and the acceleration of scientific-technological advances. Many new challenges arise therefrom to the organization of the basic material and business organizational structure of combines and enterprises. The Leipzig Lathe Works VEB, for example, has been realizing an at least 30 percent rate of innovations. Exports account for 80 percent of output. By gearing itself to special user needs, the production structure of the combine was altered. The

emphasis shifted from standard machines to specific technological solutions and fully interlinked machine systems including know how and software. Optimum series shrank as the result. Up to now series customarily involved 40-80 machines; nowadays 10-15 are considered a large series. Job production also is on the rise as the result of the demand for custom made accessories.

In the past, the Rail Vehicle Construction Combine concentrated on the production of large numbers of passenger coaches. In recent years it considerably expanded its production and service program (freight cars, equipment, projects for entire factories and so on). This altered profile requires management to adopt a different approach also to the long-term development of the combine. No longer is the main task represented by the rational production of a complex product; the combine now needs to confront the transportation task as a whole. This calls for different modes of thought and strategies as well as for the appropriate redesign of the reproduction process.

Upon assuming extensive export orders, the IFA Combine needed to even more thoroughly adapt its trucks to the specific needs of foreign markets. That involved mainly the speed of its response to market changes, consideration of various customer wishes and the expansion of customer service. The combine now produces the IFA W 50 in 53 basic variants and with 212 country specific modifications.

All these and many other examples underline the statement that "the process of the socialization of production certainly does not proceed in such a linear manner that production criteria are bound always to grow, series to get larger, the factory to specialize in a steadily smaller range, and so on--a single glance at current business practice teaches us exactly the opposite." (12) The organizational form of the combine basically and fully corresponds to these changed developmental trends of the socialization process. While, in the past, industrial enterprises were strengthened specially by the concentration and specialization of production, the development of the combine is primarily determined by the tight links between science and production. Consequently the combine is not just a large enterprise, it is a qualitatively new economic unit.

In this meaning, Soviet economists maintain that "in the conditions of the scientific-technological revolution mere product specialization is replaced by diversification--the production by an enterprise, association or industry of various products traditionally manufactured by another industry but linked by a technological connection." (13) Due to the rapid renewal and differentiation of products, in particular, "the nature of production needs to be altered from the bottom up. Production must be flexible and mobile and needs to be quickly convertible. Production associations with a broad product nomenclature therefore reflect the objective inevitability of the present-day development of production." (14)

Conformity of the Economic Organization with Assortment Structures

The ongoing differentiation of production reinforces and necessarily renews the contradiction between the width of the product range and the production

criteria required for economic manufacture. The deepening of the international division of labor and cooperation as well as the extensive operation of the building block principle represent crucial approaches. On the other hand we must also note that the economic importance of product specialization for the achievement of large series has often been overestimated. Greater productivity in manufacture was frequently obtained at the expense of rising freight costs or losses of flexibility. Of course the assurance of the highest production criteria continues to be in the foreground with regard to typical large series and mass products. However, such products represent only part of social production. The other part consists of single and small series products. The distinction of these two fields, including the differentiated use of business organizational forms, is another factor for securing the greatest possible benefit from differentiated production.

A closer scrutiny of the process of assortment expansion shows that the sector of special products especially is enjoying steady growth. This means that the product range is not just getting larger but also changing its structure. The growing diversity is due primarily to the increase in special productions and single and small series products. These typical assortment structures reflect the ratio of large and small series production or standard and special production.

Lenin had already revealed the basic dialectic between these two sectors. In his analysis of the evolution of capitalism in Russia, he wrote: "It seems paradox for the growth of...small trades to reflect the growth of capitalist manufacture, and yet it is so." Precisely the "dissection of production into the simplest operations...as the preparatory step toward the introduction of large-scale production by machine also and at the same time resulted in the growth of small trades."(15)

Later history demonstrated that this interaction is of general import for the process of production socialization. Much that was once in the sphere of special and small production is now included in the system of large-scale production, that enjoys clear primacy. On the other hand this does not mean that the share of single and small series manufacture automatically declines. This latter sector is constantly renewed as the consequence of the inevitable differentiation of production and needs, and also as that of the further gains of large-scale production.

Each developed national economy is therefore compelled "to tackle two main tasks at one and the same time: Firstly the output of a wide product range responding to differentiated local and personal needs, secondly the achievement of the greatest possible economic efficiency."(16) These tasks clash to a certain extent; the greatest possible efficiency is achieved mainly in the course of the large series manufacture of standard products. However, as scientific-technological progress speeds up, the demand for single and special products grows, so that the differentiation of production and needs continues to increase steadily.

The current development of microelectronics provides an illuminating example of this process. Circuit production is generally subdivided into the two major sectors of standard circuits and special order circuits. Due to the

increasing specificity of uses, the rapidly growing diversity of the assortment is caused mainly by the second sector. The Microelectronics Combine raised the output of microprocessors from 2,200 in 1978 to 135,000 in 1983. At the same time types of active electronic components grew from 274 to 1,086. Despite this successful development, it is "now imperative for our national economy to further raise the volume of microelectronic output and broaden the product range." (17) The early 1980's saw a definite rise in the demand for customer specific hybrid integrated circuits, indeed to such an extent that the Hermsdorf Ceramic Works, the manufacturer, was unable to satisfy these many demands. The problem was solved by setting up an independent batch manufacturing center exactly where most user companies were located. A regionally integrated chain linking developers, producers and users was thus created. This procedure also resulted in considerable benefits for the traditional producer in Hermsdorf, now able to concentrate entirely on large series production.

As a rule we may definitely distinguish two groups within the broad product range. On the one hand there are a few items that account for the lion's share of total output. On the other, many different items account for a small share of production. According to an analysis of 217 items in the container assortment produced by machine construction, for example, 200 items or 92 percent of the total accounted for only 5 percent of the annual output of containers. That, in turn, means that 17 headings account for 95 percent of the total assortment produced. Another study in a machine construction combine yielded similar results with respect to the assortment of cylinder gears. According to this second analysis, 81 percent of product headings are manufactured in batches of less than 100 each, in other words these headings amount to no more than 27 percent of the total. Another persuasive example is offered by the assortment structure in the parent enterprise of the Wolfen Photochemical Combine. The output of a total of 180 different kinds of film achieves 28 percent of commodity production. A small enterprise or small and relatively independent production unit is therefore the most advantageous organizational form for special and batch production. This is not a matter of a small enterprise per se but of the coincidence between objective demand structures, material production conditions and business organizational forms. If such a coincidence exists, even small units may achieve a great deal of efficiency. By carrying out the extremely important function of increasing the density of assortments in the national economy, they complement large-scale production and, in addition, provide the prerequisites for more rapid development. (18) These interrelations are basically applicable to all industries; particularly extensive experiences are available in light industry. In that industry, "a meaningful relationship between large, medium and small enterprises in the combine has prevailed for years. Smaller units are encouraged wherever specialized productions, assortments with advanced further processing and often in batches, traditions and familiar trademarks justify their operation." (19)

In the clothing industry, the features of small scale production apply to, among others, the manufacture of luxury items. The special nature of luxury item production consists in small orders, great product diversity, broad materials use, higher quality demands, specific sales cycles and conditions. As a result of these specific reproduction conditions, the production of

luxury items must be managed uniformly and with profound knowledge of the product from development through marketing. Some outerwear combines deliberately employ smaller units for this very reason. If no VEB is involved, these enterprise parts need "to be granted relatively comprehensive independence...The legal status of these works should most closely approximate to that of a combine enterprise, though they are not legal entities."(20)

In the Hosiery and Knitwear Combine, the development of the business and management organization is largely based on the distinction between the staple or standard assortment on the one hand and fashion products on the other. The production of the standard range, concentrated in relatively large enterprises, is mainly concerned with productivity. In the manufacture of fashion products, it is imperative also to ensure the greatest possible flexibility. Production in small and medium enterprises features and demands small batches, a high proportion of reserve stocks of equipment, materials and trimmings, a broad product range, rapid production conversion, manpower resources, and so on.

Current Manifestations of the Concentration Process

The progress and structural change of the productive forces also spawns new trends and criteria for concentration. Socialization is a general historical trend specifically operating in each social formation, and the same holds true for its manifestations. The processes of concentration, centralization, cooperation and combination do not proceed in a vacuum; they always mesh with the respective historical and socioeconomic contexts and objectives. The planned development of socialist socialization and its forms necessarily presumes that their particular method of operation in socialist conditions is properly appreciated. As concentration is often considered the crucial process of socialization and the level of concentration as its clearest reflection, the exact use of categories is imperative.

Marx most often used the term concentration to characterize the transition from simple to capitalist commodity production, from individual to social labor. Involved here is "the conversion of individual and fragmented to socially concentrated capital goods."(21) Marx sets precapitalist production methods against the largely similar terms concentration, cooperation, combination and the tall stepladder. These categories are designed to most of all express the new quality of the capitalist production method; in terms of history they are predominantly linked to the evolution of capitalism. Marx thus always compares two qualitative methods of production--the isolated individual work day with the combined work day, simple with capitalist commodity production, the independent direct producer with the capitalist.

This means that the advantages of the cooperative work process are valid only in contrast with individual processes. The "new strength potential" of combined labor therefore is new only by comparison with fragmented individual labor. Concentration also is the clearest and most sharply defined manifestation of socialization only in this context. Later concentration processes always start from an already existing tall stepladder. They involve no qualitative conversion but a more or less significant quantitative change. It follows that all features and criteria that Marx links with this specific

meaning of concentration cannot be directly transferred to qualitatively different concentration and centralization processes. The nature of centralization also fundamentally changes in socialist conditions. In capitalism, concentration and centralization serve to secure and improve the operation of the individual capitals; centralization in socialism represents a method for perfecting the operation of the entire national economy. Mergers, acquisitions or investments, for example, do indeed very quickly enlarge the economic potential of the respective economic unit. However, the "social sum total," decisive for socialism, is initially untouched thereby. Moreover, centralization in capitalism is also coupled with "decapitalization" or a change in ownership. The merger of competing capitals to form a greater capital also involves the transition from the unplanned division of labor between these enterprises to planned specialization within an economic unit. This represents a fundamental qualitative change. No change of ownership occurs in socialism. To begin with, the merger of socialist economic units therefore reflects only a different subdivision, a different classification of the production and economic units within the national economy as a whole. In addition to the study of the historical determinants we therefore need an exact and logical definition of the concentration processes. The present concentration processes cannot be described as the mere enlargement of existing economic units. Their analysis presumes a distinction of specific kinds and directions. Only differentiation facilitates a more profound probe of the causes of concentration processes and their interaction with other types of socialization.

The separation of concentration into qualitatively different processes is a concept found mainly among Soviet economists.(22) They agree that this involves at least the distinction between concentration processes caused by technical development and those that are mainly due to business organizational factors. These two processes arise from different causes. Their combination often has the result that the nature of new processes--such as combine establishment--fails to be recognized or that concentration processes are wrongly appraised from the economic aspect.

Concentration due to technical factors relates only to the enlargement of producing units, usually places of production, factories, and so on. This process is mainly reflected in the tendency toward a rise in production criteria or optimum/minimum factory size. In the case of combines, on the other hand, the emphasis is not usually on larger production units but--as mentioned earlier--on the systematic combination of science with production.

In view of the fact that economic concentration, the enlargement of economic units, is tied to the respective production conditions, it is almost impossible to compare these processes in socialism and capitalism respectively. We read in various publications that socialist countries, such as the USSR, have a far higher level of concentration by comparison with capitalist countries, such as the U.S.A. However, this always refers to economic concentration, the number and size of economic units. It is much more important to compare the status of the development of the productive forces. This latter is far more reflected in technological concentration and specialization. The establishment of large economic units in socialism represents above all the conscious organization of production conditions in

order even more actively to encourage the advance of the productive forces. Ultimately the success or failure of these efforts can be measured only by the result.

In general earlier attempts to measure and appraise concentration in economic terms have often had inadequate and one-sided results. Nevertheless, important practical business decisions tend to be made on the basis of these results. The frequently cited "productivity gap" between large and small enterprises is in many cases due to mistakes in measurement and the intermixing of different industries--a procedure that Lenin had already branded as being wrong and inadmissible.(23) This also applies to the constantly recurring assertion that "efficiency grows along with the increasing size" of combines.(24) Efficiency is here measured by the indicator "industrial commodity production per blue collar and white collar worker"--usually described as labor productivity. However, as we all know, this indicator does not reflect the standard, and its growth embodies no more than one aspect of efficiency. A meaningful economic appraisal of the concentration processes, on the other hand, presumes that it is based entirely on total efficiency, the ratio of total costs to total profits.

When concentration caused by technical factors is considered, it is usually assumed that technical progress involves the enlargement of the places of production, plants, factories, and so on. In fact this is a tendency only, because the opposite may also happen. Evidently we are here confronted with the dialectic of the evolutionary and revolutionary phases of technical progress--the concentration promoting effect of quantitative improvement tends to be crossed by qualitatively new technologies. At the same time it is imperative to take account of the wide differences among industries. A small factory size may predominate in one industry because technical advances have long stagnated, while in another enterprise the size of the factories may actually decline because qualitatively new technologies are used.

The perfection of machinery in the course of a steady process, the accumulation of improvement innovations, ultimately conduct toward a point when qualitative changes due to basic innovations occur, when old technical equipment is replaced or joined by new machinery with totally different operating principles. Marx lent special emphasis to this dialectic in connection with the organic composition of capital. Forward leaps are "constantly interrupted by rest periods and merely quantitative expansion."(25)

Qualitatively new technologies normally apply quite different criteria to the optimum size of production units. While the steam engine initially functioned as a "central engine" and all operating machinery in a factory was attached to it by transmission, each machine obtained its own motor after the introduction of electric motors. Similar to this decentralization of propulsion, present-day microelectronics results in the decentralization of control and data processing tasks.

Starting from current developments of technical progress, in particular the far reaching effects of microelectronics, we get more and more assessments and forecasts regarding the tendency toward a reduction in enterprise sizes, the

"deconcentration of production."(26) This development, the decline in the size of production units, may be observed in capitalist industrial countries also.(27) It is caused on the one hand by the decentralization of control and data processing functions, on the other by the totally new relationship between production criterion and flexible automation. The processing centers "CW 1000," manufactured by the "Fritz Heckert" Machine Tool Combine, for example, are capable of turning out 50 different prismatic parts. It only needs 2,000 parts per annum to achieve the profitability that had taken 100,000 parts per annum when rigid automation prevailed. Moreover, flexible automation facilitates and indeed requires a new integration of the production preparatory, operating and realizing processes, of main and ancillary manufacturing processes, of management and planning.

Alongside the speed-up of scientific-technological progress, the size of production units due to technical factors also changes faster than in the past, while differentiation between industries increases. These processes, though, relate only to the development of the size of technical units--places of production, plants, and so on. These are developmental trends operating within the combines and enterprises. The appearance of some trends of technically caused concentrations therefore has no direct connection with the development of combine size. It is imperative rather to spot these trends linked to technical advances and discover the optimum forms of organization within combines and enterprises.

Relatively Independent Economic Units in the Combine

Further development and, in general, the "socioeconomic nature of the combine is decisively defined by the fact that the combine is based on legally and managerially independent enterprises."(28) The retention and indeed reinforcement of the enterprises' independent responsibility responds to the principle of always combining the perfection of management with the higher development of democratic centralism. This applies not only to relations between combine and combine enterprises but also to the status of enterprise parts, plants and places of production. It is precisely this internal business organization of the combines that raises new issues of managerial independence in the process of socialization.

The same applies to the national economies of the USSR and other socialist countries. Consequently, it is "one of the most important and complex tasks now challenging economics..to define the frontiers of independent business-operational responsibility."(29) The status of combine enterprises and the extent of their independence may change as a consequence of the further definition of the material structure and the evolution of the relatively closed reproduction process in the combine. This may imply, for instance, the specialization on component manufacture of former producers of finished products or central manufacture. Of course it is possible that the status of enterprise may be lost in this process or, conversely, for that status to be awarded to former enterprise parts.

The extent of the economic and legal independence of enterprises and enterprise parts depends on many factors. They include the unit's place in the reproduction process and the system of specialization in the combine,

concrete tasks with regard to meeting the demand, technological and regional factors, aspects of earlier development such as particular traditions, and others. Relative economic independence must result in the respective units achieving a generally greater performance consonant with national objectives. The concern is with the organization of collective economic interests that establish the base for inspiring all working people to the more extensive utilization of the law of the economy of time.

Closer scrutiny of the size structure and the regional distribution of enterprises and production units alone illustrates the many differences between combines. As regards enterprise size, we may draw a crude distinction between combines

- Having a clearly preeminent parent enterprise employing more than half of the entire personnel (mainly in the chemical industry),
- Combining several relatively large and equally strong enterprises (mainly in heavy machine and equipment construction),
- Combining a few large and many small enterprises.

The presence of relatively many small and medium enterprises in one combine may reflect inadequate concentration. It may also be the result of deliberate organization. The latter applies in particular to the specialization of enterprises carrying on batch production and aims at the greatest possible flexibility.

The regional distribution of production units, too, may be due to very different causes. It may be attributable to the need to locate close to raw materials or markets--examples are the combines of the construction materials industry or the Metal Processing Combine. The regional distribution of energy combines as well as of baked goods and beverage combines is also the result of the need to be close to their customers. Furthermore, a wide spread of locations frequently occurs if a combine represents an entire industry (such as footwear and electric motors). It is also possible that the technical base does not require much concentration of production (hosiery/knitwear, decorative items). Lastly, the regional distribution of some combines arises from their duties with regard to customer service (household appliances, radios and television sets, Robotron).

Studies have confirmed that the establishment and consolidation of combines has perceptibly speeded up the concentration of enterprises. Since the GDR was founded, an uninterrupted merger process has prevailed in industry. In 1950 there were 23,582 industrial enterprises, in 1960: 17,964, 1970: 11,564, 1980: 5,031 and 1984: 3,653. It took 20 years to halve the number of enterprises, barely 10 years to achieve a second 50 percent reduction.

This centralization process left largely untouched the numbers of places of production and technically and regionally relatively independent units. Rapid enterprise concentration is thus opposed by an almost equal multiplication of places of production per enterprise. Consequently an enterprise less and less represents a spatially integral unit. At the same time it happens quite

frequently that not only enterprises turning out similar products or technologically linked are merged. The enterprise therefore also tends to be less and less identical with a relatively independent technical unit. The substance of the classification "enterprise" has changed significantly. An external sign of this is the extraordinary variety of the definitions of enterprise.(30)

In view of the serious reduction in the number of enterprises, the issue of the lowest economic unit is gaining increasing topicality. These are the basic economic units of social production or, in other words, that indivisible production unit that objectively requires relative economic independence. The independence of enterprises, including small and medium enterprises, is not a feature to be arbitrarily assigned or withdrawn. Indeed, it is based on several objective though changing factors of the material reproduction process. At the same time, collective economic interests are primarily realized in the enterprises.

If economic independence is primarily decided on the basis of the units' place in the reproduction process, the formation and promotion of collective interests, and so on, it is important to define them from the base up. As in the national economy as a whole, democratic centralism, the governing organizational principle of socialism, must be creatively used and perfected within the combines also. Of course this is not limited to the centralization of some functions and the organization of subordination relations according to the criterion of the management range.

A more detailed study of the extent of concentration achieved in our industry by 1984 reveals that each combine has on the average roughly 16 enterprises and 168 places of production. This in turn means that every enterprise consists of an average of 10 places of production. The spread in the structure of enterprises and places of production is at its widest in some combines of light industry. The 63 enterprises of the Hosiery/Knitwear Combine are made up of 864 places of production. The ratio in the Deko Combine is 70 : 983, in the Cotton Combine 25 : 630. We also need to remember that some enterprises are not only composed of many places of production but are also distributed across several kreises or even several districts.

In many combines the reduction in combine enterprises results in a contradiction: The number of enterprises no longer agrees with that of objectively needed economically independent units. The best approach to this problem is the assignment of greater independence to enterprise parts. Accordingly the law says that enterprise parts must accomplish economic tasks and are therefore assigned rights and duties by legal regulations, statutes or orders.(31) Of course this development does not change the fact that the enterprise is the basic economic unit in the meaning of planning and economic accounting.

Nowadays many combines have enterprise parts that act as de facto enterprises. "Day-to-day business practice not only in the GDR but in all CEMA countries shows that such enterprise parts gain increasing quantitative and qualitative importance as the consequence of the growth of large-scale economic units."(32) Many of these "quasi enterprises" are former VEB's. This

exemplifies the fact that the relative economic independence of some units is an objective necessity and cannot be annulled by management decisions. Many combines are therefore confronted with the need to increase the independence of some enterprise parts and to clearly settle their status in the combine. In some combines such as EAW Berlin, Hermsdorf Ceramic Works, Lacquers and Dyes and IFA Truck Combine, the emphasis is on the business organizational definition of the parent enterprise. The establishment of relatively independent enterprise parts represents an important approach to the assurance of rational combine management via the parent enterprise.

However, only a few combines have as yet defined enterprise-like enterprise parts and decided their rights and duties. A clear settlement is in place in the Brandenburg Quality and Fine Steel Combine. This combine has 25 so-called "branch enterprises" subordinated to the 8 VEB's. The branch enterprises are themselves composed of several enterprise parts or places of production. The combine statute states that the branch enterprises are charged with the accomplishment of economic tasks, in particular the planned improvement of the cost/profit ratio. The branch enterprises organize sales, are assigned part of the premium fund, may conclude labor contracts, business contracts and contracts with local organs. The manager has the title "branch enterprise director."

This process clearly shows that it is not only imperative to assign a great deal of independence to the decisive unit of the national economy. It is equally necessary to settle the extent of economic independence at all levels of the national economy. The resolute business organization of relatively independent enterprise parts results on the one hand in the further differentiation in the system of socialist production and economic units. On the other hand, a new and qualitatively different type of organization and consequently a new economic category thereby arises between the VEB and the place of production.

FOOTNOTES

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11698

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DIFFICULTIES EXPERIENCED BY RAILWAY PASSENGER SERVICE

Sofia ANTENI in Bulgarian 6 Aug 86 pp 4-5

[Article by Mariya Shalaverova: "The Spot That's Clean Is not the One That's Frequently Swept"]

[Text] Why Do We Prefer to Travel by Train?

BDZh [Bulgarian State Railways] SO [Economic Trust] Stepping up Adoption of Technical Innovations

Quality of Service Inconceivable Without Travel Standards

Where to Look for Hindrances to Railway Mainline of the Future?

Statistics assert that passenger traffic is a very variable quantity. A while back people preferred motor transportation. Today transportation is concentrated on the railroad because it is a way out of the situation that has arisen. And tomorrow? The specialists are of the opinion that this advantage will remain. For whereas in 1982 97 million people were carried, in 1985 there were already 105 million, and this year the figure is expected to jump to 110 million.

Dimitur Manchev, director of the Railway Car Directorate of the Bulgarian State Railways Economic Trust, anxiously told me, "We do not have sufficient rolling stock to cover the passenger traffic!" Let us interpret this remark. During the Ninth 5-Year Plan the Andrey Zhdanov Plant in Dryanovo is supposed to produce 320 railway cars and to import 220. The Bulgarian producer is not ready, however, and the targeted 10 cars for 1986 will be finished only on paper. Procurement of the specified number of cars from imports is also problematic.

One addition: the passenger cars that are in service at the moment are of outdated design and are depreciated. Many of them do not meet present-day requirements for normal passenger travel. The door and window mechanisms often get out of order. Most of them have no hot water installations during the winter and this creates a number of inconveniences. Many spare parts are lacking.

Some specific examples in support of what I have said. The "Yantra" express train that runs on the Gorna Oryakhovitsa-Sofia line at first had two sections. Each of them traveled in the daytime so there would be an opportunity to clean it and check its technical serviceability. People's exceptional preference for this train necessitated increasing the number of cars from 6 to 8. But there were no cars to be drawn on and one section was dropped from the run. Although the cars were diligently maintained, their age was visible even under the thick layer of "makeup." Various defects showed up. Often several cars broke down and at the same time needs impelled increasing the size of the section. But where were the cars to come from? There are similar problems for the other express trains as well.

The "Dobrudzha" worker passenger train makes the run on the Varna-Kardam line. It has a movie car, a car with a kiddies' corner and a modern interior. But whenever a car from this section breaks down, it is replaced with any car whatever. Thus, there has resulted in practice a decline from the position it had by then won in the quality of service.

Lest our faith in our preference for railway transportation be shaken, let us say at once that the specialists in the Railway Car Directorate and the management of the Bulgarian State Railways Economic Trust have not come to a helpless halt in the face of these difficulties. They are searching for new solutions for modernizing the already-depreciated rolling stock. For example, jointly with the Electronics Enterprise in Gabrovo, a system of generatorless lighting equipment has already been developed. Within the CEMA framework we are becoming leaders in the application of this innovation. The effect is multidirectional. Current is drawn directly from the overhead contact system. In consequence, there will always be light in the compartments, whereas now this depends on the condition of the generating plants thus far used. With the new equipment three junctions will be eliminated, and thus repair time is shortened and maintenance becomes cheaper. By the end of the 5-year plan all cars will have a generatorless lighting equipment system.

Heretofore there were also many heating problems. Hardly a newspaper in Bulgaria has failed to publish citizens' letters that compartments are either steam baths or refrigerators. Our railwaymen assure us that by next winter heat will be regulated automatically in a range of 20-24°. The most modern cars will be air-heated.

It is not unimportant how the cars are washed. On this score the "Verila" Economic Combine has been helpful. It has suggested compounds for the semidry-cleaning of compartments. Research is now under way for the most successful versions of detergents that will not induce corrosion of cars during external cleaning.

Technical progress has already impinged upon other elements of the overall concept of "quality of transportation service." Asen Tomov, director of the Passenger Transportation Directorate of the Bulgarian State Railways Economic Trust, said, "Young specialists at the Plovdiv railway junction have developed a computer information system containing a wide data bank. At the Plovdiv, Varna and Tolbukhin stations you will easily keep track of train

schedules, junctions, ticket prices, etc. This innovation will also be introduced at other hub stations. We shall change the volume of information in the trains themselves. Instead of 'inundating' passengers with music they're sick to death of, we shall turn on broadcasts of Radio Sofia. When we approach a given station, we shall give the maximum of specific information having to do with the trip itself and shall cut down the geographical-historical and economic information about the conurbations.

"At the end of September, 10 model fast trains will travel between Sofia and Plovdiv. During the autumn Plovdiv Fair we shall experiment with a new automated seat- and ticket-sale reservation system. By means thereof we shall seek the optimum version for operations during the years ahead. SIBIL [Sistema za izdayane na bileti; ticket issuance system] has begun to operate experimentally. It uses a 'Pravets' computer, into which complete information about transportation rates is inputted. The experiment is on the Sofia-Kyustendil, Sofia-Dragoman, Sofia-Petrich and Sofia-Bankya lines. Accounting operations will be performed automatically, the job of the ticket clerks will be made appreciably easier, and errors will be avoided.

"We have taken the first steps to introduce a new seat-reservation and ticket-issuance technology. Our sole aids at present are the ball-point pen and the telephone. A reliable assistant in the future will be computer equipment. And instead of just 6 days, as at present, a citizen will be able to book his journey 30 days ahead of time. And also we will be alerted much earlier of needs, we will detect peak moments of stress and react in timely fashion.

"We already have experience in dispatching fast interurban trains with a pace-of-flow schedule in the Sofia-Plovdiv sector. We shall expand this organization stage by stage. This will be done first of all in the following sectors: Sofia to Pleven, to Vratsa, to Blagoevgrad, to Kyustendil. Not only world experience, but also our first results have shown that this new technology is highly efficient for the passenger."

Serious work faces the railwaymen in the years of the Ninth 5-Year Plan. They will do whatever is up to them for accelerated adoption of innovations. For example, passengers do not know what great difficulties there are in printing different ticket types. Some 10 years ago concentration of the printing facilities and the printing office passed to "Bulgarska Poligrafiya" [Bulgarian Printing and Publishing]. But the result has been dismal. Previously we made the tickets ourselves; now half of the amount we need is procured from the Soviet Union. But we cannot count forever on this friendly gesture. The outcome then will be that the old setup will have to return--the Ministry of Transportation will have its own printing facilities. For this job is not just tickets. Look at our guidebooks and compare them with those of other countries. One may wonder whether in terms of color or in quality of execution we are competitive. But it is precisely these guidebooks that are our "ambassadors" to foreign countries and the operation of the Bulgarian State Railways Economic Trust is judged by them. We can make the same statement about the rest of the advertising materials as well.

Against the background of these problems it is not devoid of interest to mention other facts as well. Do you know that in the Nadezhda depot alone every

year several thousand mirrors are placed which His Majesty the Passenger makes free to break or steal? Unknown vandals make off with elements of the heating and lighting systems and cut up the seats. The total cost of the damage due to such acts in the aforementioned depot alone is 300,000 leva. And on a national scale?

Have you ever passed through a train section just after the passengers have left? Scraps of snacks, fruit and vegetable peelings, cigarette butts, bottles and seeds are freely strewn over the floor; the toilets are clogged. Yet everybody knows the proverb, the spot that's clean is not the one that's frequently swept but the one that's looked after.

Therefore, we conclude with no specific suggestions from our travel into the labyrinth of railway transportation. We shall write them with the help of the transportation workers themselves and with your participation, dear reader. For according to the statistics you ride at least 20 times a year on a train. Therefore, you have an opinion and an attitude.

6474

CSO: 2200/165

NUCLEAR POWER PROGRAM OUTLINED

AU311406 Prague TRIBUNA in Czech No 29, 23 Jul 86 p 18

[Pavel Schranil article in the "Scientific and Technological Developments" column: "Science Is Harnessing the Nucleus; Energy for the Next Century"--capitalized passages published in boldface]

[Excerpts] The classic source of energy in our country is still brown coal. Its extraction is currently coming to a culmination point and in the course of the eighth quinquennium it is expected to drop from a current extraction of approximately 103 million metric tons annually to 93 million metric tons in 1990. It will be replaced primarily by nuclear energy and--in limited instances, particularly for the purpose of obtaining heat--also by Soviet natural gas. Our tasks in the field of nuclear energetics are smaller than we imagined in the mid-seventies, but their accomplishment nevertheless involves extraordinary investments and other material resources.

The original task envisaged our building 10,000-megawatt facilities by 1990. Although this figure continues to be valid, in the current situation it is obvious that it can be achieved only by the year 2000. Of course, it is not merely a matter of building new electric power plants (new coal power plants will no longer be built); it is also one of replacing the older resources which are running out. Apart from that, we are counting on building nuclear heating plants--for the time being near four of our largest cities. A heating plant works at lower temperatures and pressures and can therefore be located on the outskirts of a city.

The following table compares the parameters of the electric power heating plant in Chvaletice with the parameters of the V-2 nuclear power plant in Jaslovske Bohunice:

	Chvaletice	V-2
Electric output (MWE)	800	869
Heating output (MWT)	2,340	2,750
Annual production of electric power (TWH)	4.8	5.65
Kind of fuel	brown coal	enriched UO2
Annual fuel consumption (metric tons)	4,985,000	26.2
Capital expenditures (Kcs billion)	6.1	10.9
Production costs (Kcs/MWH)	260	220

However, in areas where heating ducts [horkovody] cannot be built, the utilization of nuclear energy for the purposes of heating plants adopts other forms. We are counting on making use of cheap nighttime electric power for accumulator heating, as well as on building local electric boiler houses in the historical parts of our cities.

The high investments required for nuclear power plants make it imperative to make the greatest use of them. The primary utilization is to produce electric power and to deliver heat for the purposes of thermal power plants, and later also for technological purposes. However, great possibilities are also created for the use of low-potential heat (which so far has been escaping into the air via cooling towers).

Another possibility of utilizing nuclear energy is radiation chemistry. After certain adjustments, the energy reactor can become a source of radiation that is conducted--via a special cycle with a fluid carrying medium--to a protected area, which is best situated very close to the reactor. With the aid of radiation we can achieve considerable results, for instance in slab [plasty] production to acquire completely new, outstanding qualities, or else one can use it for wood processing so as to achieve great hardness and resilience parameters.

However, the use of nuclear reactors for such purposes is connected with great problems; already during their production certain adjustments must be carried out in their construction, and additional equipment installed. That is why those who produce reactors have lots of well-founded and substantiated objections, despite the fact that on the other hand the contributions to the national economy would be considerable. PERHAPS IT WOULD BE BEST TO RESOLVE THIS ISSUE INDIVIDUALLY, AND PRODUCE THIS EQUIPMENT AS AN EXPERIMENT FOR ONE OF THE 400-MEGAWATT REACTORS.

After completing the construction of nuclear power plants in Jaslovske Bohunice, Dukovany, Mochovce, and Temelin we are counting on starting the construction of other plants in North Moravia, East Slovakia, and East Bohemia. Toward the end of the nineties the second-generation BN-TYPE reactors can be expected to start operations with the use of fast neutrons and of fuel enriched about

30 percent (compared with the current 3.5-percent enrichment). These reactors are the organic extension of the currently operating VVER delayed-neutron reactors, the "burnt out" fuel elements of which provide the main, even though not the only possible, source of fuel (plutonium) for the BN-TYPE of reactor.

From the viewpoint of the present state of science, the use of nuclear synthesis--fusion, or of other physical principles--cannot be considered realistic in the foreseeable future. So far it has not become clear which systems are most promising--the electromagnetic ones, which are termed TOKAMAK, or the inertial systems. THAT IS WHY ONE MUST ALSO RECKON WITH THE USE OF NUCLEAR POWER PLANTS BASED ON THE PRINCIPLE OF URANIUM, PLUTONIUM, AND THORIUM FISSION IN THE FUTURE; THAT IS ALSO WHY IT IS NECESSARY TO SEARCH FOR THE BEST POSSIBLE WAYS OF USING THE PLANTS COMPREHENSIVELY. This is also the basic orientation in the construction of our energy base, an orientation which promises the greatest realistic success and which ensures the solution of the energy problem for many decades to come.

/8309

CSO: 2400/392

GRAIN HARVEST PROBLEMS DISCUSSED

AU191340 Prague RUDE PRAVO in Czech 15 Aug 86 p 1

[Editorial: "The Pros, Cons, and Needs of the Grain Harvest"]

[Excerpts] Today, when in the Czech Socialist Republic [CSR] only one-third of the area sown with grain remains to be harvested, and in Slovakia the last hectares in the mountainous areas of the Central Slovak and East Slovak region are left, one can say that harvesting work was carried out at an unprecedented pace. It ends in virtually the entire territory 14 days earlier than in previous years.

People with their machinery are doing good work, and losses, compared with preceding years, are smaller. Of course, the areas of flattened grain which were small this year, and the favorable weather conditions played an important role here.

But, above all, this was the result of good preparation of machinery and the people, better organization of all work, including well-prepared and planned cooperation assistance. Compared with last year, farmers had 1,500 more new, modern grain harvesting combines, and while the statewide average per combine is 115 hectares of basic cereals and legumes, each machine--thanks to cooperation--has been harvesting only 95 hectares at home, and the rest in other districts. Compared with the last year, the mechanical condition of machinery has greatly improved. Repairs of machines are being carried out flexibly and rapidly, and farmers have even ensured the necessary spare parts, partly by overhauling them in their own workshops. The result was that only 1.3 percent of harvesting combines were inoperative in the CSR last week due to mechanical breakdowns.

The warm and dry weather for the entire duration of the harvest in Slovakia and in the first half of the harvest in the CSR created good conditions for high performance during mowing, for minimal losses, and for the necessary quality of grain, especially from the viewpoint of the food industry. The gluten content, which considerably influences the quality of bread, is between 23 and 32 percent in wheat grown for human consumption.

However, in some traditional production areas, especially in the West Slovak and South Moravian region, this weather had an unfavorable influence on the per-hectare yields, which lag behind previous years. The lack of rain, especially in the period of ripening, caused grain to dry out and thus also its per-hectoliter weight was lower, and there was a greater proportion of grain waste [zadina].

According to experts' earlier estimates, this year's harvest of basic cereals cannot be depicted as being poor. Although it will be smaller than in the preceding 2 record-breaking years, it should be on the level of the average of the preceding years of the most successful quinquennium thus far. However, the situation demands that farmers implement all attainable measures to reduce the anticipated shortfall.

/8309

CSO: 2400/392

BRIEFS

BENO TOURS RAKOVNIK--Mikulas Beno, secretary of the CPCZ Central Committee, got acquainted today with the implementation of the conclusions of the 17th CPCZ Congress in the conditions of Rakovnik District. During conversations with representatives of party and state organs of the district, with representatives of the leadership and working people of the United Agricultural Cooperative Dukla in Kolesovice and Rakona Rakovnik National Enterprise he was interested, above all, in the standard of the work of the district party organization in safeguarding the tasks of the Eighth 5-Year Plan. He was briefed primarily on intensification programs of speeding up economic development, faster implementation of research and development results and growth of efficiency and quality of work in all spheres. In this connection, Mikulas Beno stressed inadmissibility of the trends to put off implementation of intensification programs and measures. He paid great attention to the questions of party work, deepening the leading role of the party, and improving the quality of its membership base. [Text] [Prague Domestic Service in Czech 1330 GMT 14 Aug 86] /8309

CSO: 2400/392

ROADWAY RENOVATION SEEN TAKING DECADES MORE

West Berlin IWE TAGESDIENST in German No 123, 12 Aug 86 p 2

[Article datelined IWE Berlin 12 Aug 86: "GDR Road Network Renovation Will Take Decades Longer"]

[Text] According to the trade journal, DIE STRASSE, the long overdue repair of the network of main arteries in the GDR's large cities and congested industrial areas will take "over 30 years more." The article stressed that traffic needs can often no longer be met with the present roads. Better fulfillment of increasing traffic demands is forcing "systematic adaptation of in-town roadway construction to new conditions," taking traffic safety into account, as well. In East Berlin and the seven GDR cities with populations over 200,000, the development of special construction capacity is necessary to perform the work needed to rebuilt streets and roads.

In view of the dismal state of many city streets in the GDR, the journal came out in favor of thorough reconstruction, including the relocation of underground utility lines away from the roadway in order to avoid traffic disruptions during necessary repairs. The problem is to place long-term effects on the economy and traffic policy above the narrower interests of individual factories and installations. Moreover, extensive preliminary work "incompatible with operational measures and the economical use of physical labor, materials and financial resources" is essential. Thus the efforts of all concerned must be directed toward finding well-founded solutions which will satisfy the need "for better and better quality and long-term economical operation."

/8309

CSO: 2300/535

STATISTICAL ANALYSIS OF LIVING STANDARDS, QUALITY OF LIFE

'Way of Life' Versus 'Quality of Life'

Warsaw WIADOMOSCI STATYSTYCZNE in Polish No 1, Jan 86 pp 18 - 20

[Article by Dr. Czeslaw Bywalec, Higher School of Economics in Krakow: "Way and Quality of Life of Polish Population in Light of Synthetic Indicators"]

Introductory Remarks and Definitions

[Text] In the last decade, the interest of social sciences in the issues of living conditions of the populace has increased in many countries, primarily in those highly developed. This is mainly due to the fact that the dynamic growth and economic development which have marked the postwar period have also brought, apart from the undoubtedly positive results (mainly in the sphere of tangible conditions of life), negative consequences. Those include, among other things, considerable deterioration of natural environment, excessive crowding in cities, increased social stratification, increased incidence of certain diseases (the so-called "diseases of civilization"), increased crime rate, frustration and alienation etc. Analysis and evaluation of economic growth and development solely in terms of economics and technology have become highly inadequate.

Evaluations expressed in social terms and, therefore, by various indicators describing, in the most general sense, the conditions, level and quality of social existence increasingly appear to be called for.

Welfare, level of life (standard of living), way of life (lifestyle) and quality of life appear to be the basic terms which adequately describe and evaluate the conditions of life of the populace and thus the social results of economic growth and development. What do we mean by these terms? Certainly, there is no agreement among specialists on the subject as to the essence of the above notions.

Without dwelling further on the issues of terminology, it is suggested that the following definitions be accepted (1). Welfare is the resources of consumer goods and financial assets remaining at the disposal of a person (populace). The standard of living is the degree of meeting human needs

which results from the consumption of tangible goods and services. The way of life is the entirety of human behavior and actions with a view to meeting the person's needs. The categories enumerated in principle describe human existence outside of work. In order to get an image of human existence in its entirety, working conditions should also be taken into account. By working conditions, we will mean the scope of work and the material and social environment in which work is done. Only now can we attempt to define the quality of life on the basis of the above four notions. Thus, it is suggested that we define the quality of life as the degree of satisfaction (content) of the person (populace) with the entirety of his/its existence.

In the present paper, we are concerned with two categories, the way of life and the quality of life, especially the latter. One can frequently encounter the view that these are similar if not identical categories (2). Such identification is clearly incorrect; most frequently, it results from certain illusions following mainly from semantics and superficial observations. The way of life is an objective category which can be ascertained empirically. In its turn, the quality of life is a subjective reflection, or, in other words, an individual or collective perception of the existing conditions of life, including also the way of life. *Eo ipso*, it is also an attempt to evaluate the entirety of human existence from the standpoint of accepted life goals and accepted values and criteria of this life.

Indicators and Methods of Measurement

The way of life can be, and most often is, described in sociological and psychological terms, or through describing human behavior. However, it can also be expressed in an "inanimate", static fashion, or through various indicators describing the breakdown and forms of consumption (meeting the needs). After all, such human behavior and human actions as outlined in the definition will ultimately be expressed through the breakdown and manner of consumption.

In order to portray the trend of changes in the way of life between 1955 and 1983, we will use several so-called objective symptomatic indicators which will indirectly and approximately describe the most significant elements of the way of life.

Pragmatic considerations were the main factor in selecting the measures. However, the availability of statistics for the longest period possible was a formidable barrier restricting the selection of indicators. In general, most of the necessary statistics for the first postwar decade are lacking. A greater amount of information which can be used in the studies of the conditions of life can be found in the available statistical sources only from the years 1955 or 1956 and on. Taking into account existing limitations, the use of the following indicators is suggested for the study of the way of life: 1) the ratio of meat consumption (including processed meat) to the consumption of baked products, in kilograms per capita; 2) consumption of detergents and cleaning agents, in kilograms per capita; 3) ticket sales in theatres and musical institutions per 1,000 persons; 4) travel abroad per 1,000 persons; 5) number of persons per one indoor swimming pool, in thousands.

The first four indicators are stimulative in nature from the point of view of statistics, and the last one is destimulative (3). As was stated above, these indicators are symptoms of the most significant elements of the way of life. Due to the strict space limitations on this paper, we will omit the justification for indicator selection and a detailed review.

Selecting indicators describing the quality of life is much more difficult. As was mentioned, these must be so-called objective indicators, i.e. expressing some phenomena (conditions) which objectively occur, but at the same time are the result of certain subjective individual behavior and perceptions.

There are few indicators meeting the above requirements in current statistical practice. This is the main obstacle to carrying out studies of the quality of life on a macro scale.

However, we have selected three such indicators for our present study. These are: 1) the number of suicides committed and attempted per 100,000 persons; 2) the number of new cases (incidence) of mental illness; 3) the share of the so-called biologically unjustified deaths (1 through 59 years) in the total number of deaths. It can be seen that these are so-called negative indicators; however, it would be difficult to use positive indicators due to the lack of empirical data. The indicators, sometimes suggested, of average life expectancy or educational level appear to be inadequate in this instance, because they basically do not meet the essential requirements outlined above (4). A long life, be it as it may essentially the greatest human value, does not necessarily mean a good life, giving much satisfaction etc. These two indicators appear to be more adequate as synthetic characteristics of the living standard of the populace (5).

Due to their nature of aggregates, as already mentioned, the selected indicators of the way and quality of life can be described and evaluated. Evaluation of the way and quality of life in their entirety can be attempted on the basis of such inductive and descriptive analysis. However, we can go further and formally incorporate the indicators selected into one final synthetic indicator of the way and quality of life. This will now be done.

Certain mathematical and statistical procedures for aggregation and composition of the so-called synthetic development indicators will be used. Clearly, these procedures and the end results of aggregation should not be overestimated, but rather viewed only as an auxiliary device for research and evaluation of the evolutionary trend of the way and quality of life. Aggregation and computation of synthetic development indicators were carried out separately for the way of life and the quality of life of the Polish population. The analysis was based on the empirical values of selected indicators from the statistical yearbooks and other publications of the GUS [Central Office of Statistics].

Synthetic development indicators of the way and quality of life of the Polish population were prepared by three methods: 1) ranking methods; 2) standard deviation method; 3) development trend method. Due to space limitations, we

will again omit the discussion of these procedures and refer the reader to the literature on the subject (6).

Development Trends of the Way and Quality of Life

Statistics needed for an empirical analysis of changes in the way and quality of life of the Polish population are compiled in table 1. As was already mentioned, the analysis of time series of these indicators makes it possible to discern a development trend of the way and quality of life. Thus, it enables us to formulate tentative hypotheses and opinions on the changes in these two categories and their relationship.

Table 1. Indicators of the Way and Quality of Life

Data 1)	Mierniki sposobu życia 2)					Mierniki jakości życia 8)		
	stosunek spo- życia mięsa do spożycia prze- tworów zbożo- wych w kg/miesz- kańca 3)	zużycie środ- ków piorących i myjących w kg/mieszkańca 4)	frekwencja w teatrach i insty- tucjach muzycz- nych na 1 tys. mieszkańców 5)	liczba wyjazdów zagranicznych na 1 tys. mieszkańców 6)	liczba mieszkańców na 1 krytą pływalnię w tys. 7)	liczba samobójstw na 100 tys. mieszkańców 9)	zapadalność na choroby psychiczne na 100 tys. mieszkańców 10)	odsetek zgo- nów w wieku 1-59 lat w glo- balnej liczb- ie zgonów 11)
1955	---	---	---	---	---	2.9	278	30.9
1956	0.27	5.1	581	9	802	3.3	233	30.3
1957	0.29	5.2	570	8	714	5.1	271	29.7
1958	0.32	5.6	608	6	644	5.4	267	30.3
1959	0.31	5.8	595	7	590	6.2	322	30.8
1960	0.29	6.0	617	7	532	7.2	344	30.6
1961	0.31	5.9	612	12	486	6.4	313	29.8
1962	0.31	6.0	572	15	435	7.4	332	28.8
1963	0.32	6.2	600	12	397	8.4	316	28.6
1964	0.33	6.3	580	18	394	8.5	368	27.5
1965	0.34	6.5	596	24	374	8.8	371	27.0
1966	0.37	5.8	581	29	357	10.5	407	26.9
1967	0.38	6.1	576	29	331	10.3	404	25.7
1968	0.39	6.3	560	22	317	10.9	447	25.8
1969	0.40	6.1	569	25	296	11.2	444	24.7
1970	0.40	6.2	558	27	274	13.2	495	23.8
1971	0.44	6.1	558	32	257	12.8	514	23.4
1972	0.47	6.0	552	319	242	11.8	513	23.7
1973	0.50	6.4	543	226	223	12.4	485	23.2
1974	0.53	6.9	538	245	208	10.7	488	22.6
1975	0.59	7.0	551	238	177	10.7	434	22.8
1976	0.57	7.5	540	304	163	13.7	452	23.4
1977	0.57	7.8	547	356	150	14.1	443	24.3
1978	0.59	8.2	520	318	146	14.8	447	24.6
1979	0.57	8.1	503	266	145	14.2	419	25.0
1980	0.58	8.6	498	192	145	13.1	435	24.9
1981	0.54	8.0	429	117	145	8.7	384	24.6
1982	0.49	7.7	400	27	142	9.6	431	24.6
1983	0.48	8.0	439	48	139	10.9	429	24.3

Źródło: obliczenia własne na podstawie roczników statystycznych GUS, roczników demograficznych, roczników statystycznych ochrony zdrowia oraz kompendium statystycznego: *Kultura fizyczna i sport w Polsce 1949-1966*, GUS, Warszawa 1968.

Source: author's calculations on the basis of GUS statistical yearbook, demographic yearbooks, yearbooks of the health service and statistical compendium "Kultura fizyczna i sport w Polsce 1949 - 1966" (Physical Education and Sports in Poland in the Years 1949 through 1966), GUS, Warsaw, 1968.

Key:

- 1) years
- 2) indicators of the way of life
- 3) the ratio of meat consumption (including processed meat) to the consumption of baked products, in kilograms per capita
- 4) consumption of detergents and cleaning agents, in kilograms per capita
- 5) ticket sales in theatres and musical institutions per 1,000 persons
- 6) travel abroad per 1,000 persons
- 7) number of persons per one indoor swimming pool, in thousands
- 8) indicators of the quality of life
- 9) number of suicides per 100,000 inhabitants
- 10) incidence of mental illness per 100,000 inhabitants
- 11) share of deaths in the 1 through 59 years age bracket in the total number of deaths

Statistical data in table 1 show that the way of life of the Polish populace generally has been improving, albeit at a slow pace. An appreciable acceleration of improvement and modernization of the way of life occurred in the 1970s, and especially in 1974 through 1977. Beginning in 1978 and 1979, a deterioration in the way of life is registered. This trend continues until 1982. In 1983, a certain improvement took place, though still small and perhaps not perceived by the populace.

Table 2. Synthetic Development Indicators of the Way and Quality of Life of the Populace

TABL. 2. SYNTETYCZNE WSKAŹNIKI ROZWOJU SPOSOBU I JAKOŚCI ŻYCIA SPOŁECZEŃSTWA

1) Lata	Syntetyczne wskaźniki rozwoju obliczone metodą rang		Syntetyczne wskaźniki rozwoju obliczone metodą standaryzowanych sum		Syntetyczne wskaźniki rozwoju obliczone metodą wzorca	
	4)		5)		6)	
	2) sposób życia	3) jakość życia	2) sposób życia	3) jakość życia	2) sposób życia	3) jakość życia
1955	—	—	—	2.20	—	1.96
1956	6.00	19.70	1.00	2.42	1.00	2.13
1957	5.40	19.70	1.22	2.14	1.19	2.18
1958	8.00	19.00	1.78	2.06	1.43	2.05
1959	7.40	16.30	2.39	1.97	1.52	1.81
1960	9.20	15.30	2.42	1.50	1.59	1.73
1961	10.00	18.00	2.52	1.82	1.66	2.01
1962	9.60	17.00	2.64	1.75	1.70	2.05
1963	12.20	17.70	2.40	1.74	1.83	2.03
1964	12.40	16.30	2.36	1.64	1.91	1.99
1965	14.80	15.70	2.55	1.66	1.96	2.01
1966	12.00	14.00	2.32	1.44	1.87	1.77
1967	13.20	15.30	2.21	1.52	1.85	1.80
1968	13.80	10.70	2.42	1.26	1.95	1.50
1969	13.40	11.70	2.37	1.37	1.91	1.54
1970	13.80	10.00	2.65	1.05	2.04	1.05
1971	14.60	10.70	2.66	1.06	2.05	1.00
1972	16.00	11.30	3.44	1.14	2.45	1.11
1973	16.60	13.00	3.43	1.25	2.53	1.20
1974	17.60	15.30	3.78	1.49	2.76	1.39
1975	20.00	17.30	4.03	1.70	2.89	1.70
1976	19.60	12.00	4.52	1.23	3.09	1.21
1977	21.40	19.70	4.76	1.12	3.24	1.18
1978	22.00	8.30	4.64	1.00	3.09	1.05
1979	20.80	10.30	4.43	1.13	2.90	1.24
1980	20.60	10.70	4.61	1.19	2.91	1.33
1981	18.40	18.30	3.35	1.90	2.10	2.16
1982	16.40	16.30	3.02	1.61	1.65	1.55
1983	18.20	15.30	2.93	1.52	2.00	1.67

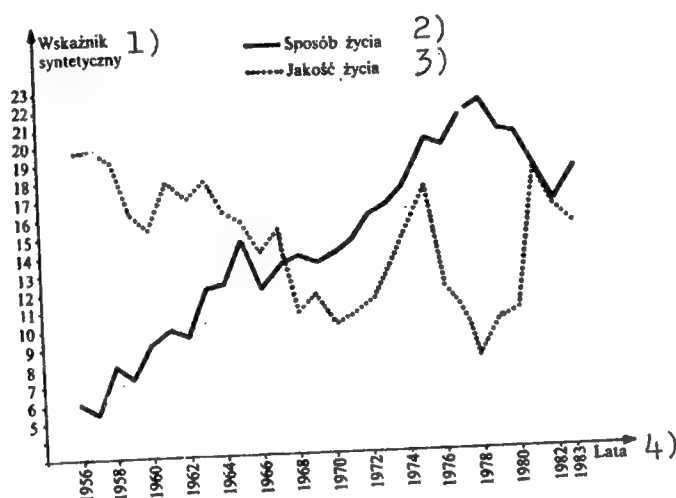
Source: author's calculations on the basis of data from table 1 and methods presented in T. Grabinski, S. Wydymus and A. Zelas, *op. cit.*

Key:

- | | |
|--|--|
| 1) year | 5) synthetic development indicators calculated by the method of standard deviation |
| 2) way of life | 6) synthetic development indicators calculated by the trend method |
| 3) quality of life | |
| 4) synthetic development indicators calculated by the ranking method | |

The data in table 1 also give grounds to state that, in the period in question, an almost constant though small deterioration of the quality of life of the population occurred. The years 1971 through 1975 as well as 1980 and 1981 are an exception; as the selected indicators show, an appreciable improvement in the quality of life occurred at that time.

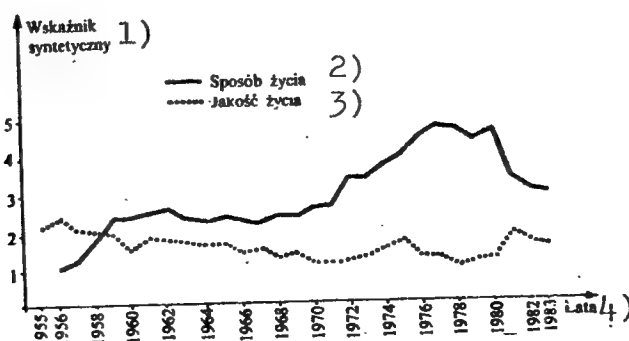
Chart 1. Movement of Synthetic Indicators of the Way and Quality of Life of the Populace Calculated by the Ranking Method



Key:

- | |
|------------------------|
| 1) synthetic indicator |
| 2) way of life |
| 3) quality of life |
| 4) years |

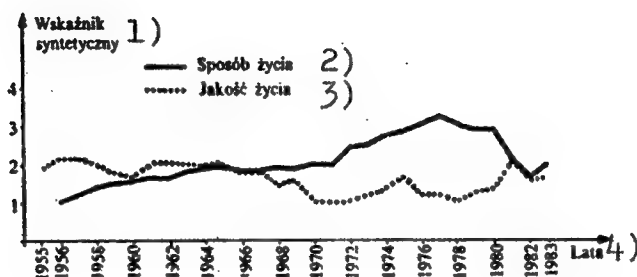
Chart 2. Movement of Synthetic Indicators of the Way and Quality of Life of the Populace Calculated by the Standard Deviation Method



Key:

- 1) synthetic indicator
- 2) way of life
- 3) quality of life
- 4) years

Chart 3. Movement of Synthetic Indicators of the Way and Quality of Life of the Populace Calculated by the Method of Development Trend



Key:

- 1) synthetic indicator
- 2) way of life
- 3) quality of life
- 4) years

An attempt to construct artificial synthetic development indicators of the phenomena studied was made in order to verify the above views. The results of calculations can be found in charts 1 through 3.

It is easy to notice that the configuration of the lines depicting the way of life and the quality of life conforms to the above statements. Despite the use of three different aggregation procedures, the end results of calculations are essentially similar. The ranking method is the most sensitive to the changes of partial empirical indicators. However, too much should not be read into these abrupt changes of the synthetic ranking indicator. Despite appearances, actual differences between the empirical values of partial indicators can be very small, despite even the great differences in the value of the synthetic indicator. The great volatility of the synthetic indicator follows directly from the nature of the ranking method. Therefore, the charts of synthetic development indicators calculated by other methods, i.e. standard deviations and development trend, are more trustworthy.

The results of calculations suggest that the way of life of the Polish populace was improving almost constantly until 1977. In the years 1978 through 1982, a considerable deterioration of the way of life set in.

However, the trend of the quality of life looks different. As all three charts show, the quality of life of our populace was decreasing before 1970. An appreciable improvement occurred in the years 1981 through 1975, but in 1976 through 1978 another decline in the quality of life took place. Renewed

growth can be observed in 1979 through 1982. As was already mentioned, 1982 brought a marked decline in the quality of life while 1983 brought a small improvement.

The opposite trends of changes in the way of life and quality of life of the Polish population are not, as it may seem, a paradox of sorts or an isolated case. It can be proven that the quality of life may deteriorate despite increasing welfare, standard of living and improved way of life (7). This is, after all, borne out by the results of research in many highly developed countries where the degree of social satisfaction with life, or the quality of life, does not improve or even deteriorates, despite the high standards of welfare and way of life.

Footnotes

1) The author discussed these issues at length in the work "Economic Growth and Changes in the Standard of Living of the Polish Population in 1945 through 1980", Ph.D. dissertation, published in ZESZYTY NAUKOWE AKADEMII EKONOMICZNEJ W KRAKOWIE, special series, monograph No 70, Krakow, 1985.

2) For more on this subject, see M.Z. Muszynska, "Way of Life: Theoretical Highlights and Controversy", STUDIA SOCJOLOGICZNE, 1978, No 4.

3) We consider valuables to be stimulative if their higher value is desirable for the populace, and lower value is not desirable. In the case of destimulative variables, the opposite is the case, i.e. higher values are not desirable whereas lower values are. Cf. T. Grabinski, "Multidimensional Comparative Analysis in the Study of Dynamics of Economic Phenomena", ZESZYTY NAUKOWE AKADEMII EKONOMICZNEJ W KRAKOWIE, special series, monograph No 61, 1984, p. 16.

4) Among others, A. Wallis suggests such indicators in the article "Quality of Life - Issues and Suggestions", RUCH PRAWNICZY, EKONOMICZNY I SOCJOLOGICZNY, 1976, No 2.

5) This was also the reasoning of the author in the above-quoted "Economic Growth".

6) These methods are described in more detail by T. Grabinski, S. Wydymus and A. Zelias in the work "Modele ekonometryczne w procesie prognozowania" (Econometric Models in the Process of Forecasting), 2nd edition, Higher School of Economics in Krakow, 1981, pp. 120 - 131.

7) Among others, A. Wallis in the above-quoted article "Quality of Life ..." and A. Rutkowski in the essay 'Categories of Social Development, Living Conditions, Standard and Quality of Life in the System of Social Statistics' in "Wybrane problemy metodologii statystyki społecznej" (Selected Issues of Methodology of Social Statistics), GUS, the Office of Statistical and Economic Research, volume 140, Warsaw, 1984.

Regional Living Standard Variations

Warsaw WIADOMOSCI STATYSTYCZNE in Polish No 1, Jan 86 pp 20 - 22

[Article by Dr. Adam Goral, Maria Curie - Sklodowska University, Rzeszow Center: "Some Remarks on the Table of Welfare"]

[Text] POLITYKA has carried articles by Z. Szeliga presenting the results of research on the ranking of individual provinces according to the standard of living of the populace (see "Where Is Life the Best?", 1985, No 16; "At Top and At Bottom", 1985, No 17 and "Mysterious Differences", 1985, No 21).

In reviewing the articles by Z. Szeliga, we should stress the in-depth analysis of the heart of the problem which we can term "the measurement of quality of life" (measurement of the level of welfare). Among the achievements of the above author are his remarks on the mode of selecting the vector of representative indicators and a diligent analysis of the value of each indicator in individual provinces. Z. Szeliga, while stressing that he is well aware of the imperfection of his quantitative research, decided to select the following representative indicators:

- X₁ - infant mortality per 1,000 births,
- X₂ - migration balance,
- X₃ - average monthly wages,
- X₄ - savings accounts in the PKO [General Savings Bank] per 1,000 inhabitants,
- X₅ - number of passenger cars per 1,000 inhabitants,
- X₆ - number of TV sets per 1,000 inhabitants,
- X₇ - useful floor space of dwellings per person,
- X₈ - retail sales of non-food items per 1,000 inhabitants,
- X₉ - volume (for 1983) and floor space (1980, 1981, 1982) commissioned in the non-socialized sector per 1,000 inhabitants.

Along with the above-mentioned merits, the work in question also has weaknesses. Certain shortcomings and lack of consistence can be observed in attempts to rank the provinces according to all indicators combined. Z. Szeliga built the Table of Welfare for 1983 on the basis of a synthetic indicator calculated for individual provinces as follows:

$$W_i = k^{-1} \sum_{j=1}^k 100x_{ij}/\bar{x}_j, \quad i = 1, 2, \dots, 49 \quad (1)$$

where

- W_i - value of synthetic indicator for i province,
- K - number of indicators considered,
- X_{ij} - value of j indicator in i province,
- \bar{x}_j - the arithmetic mean of j indicator calculated on the basis of formula:

$$\bar{x}_j = \frac{1}{49} \sum_{i=1}^{49} x_{ij} \quad (2)$$

To the author's mind, from the standpoint of welfare level as defined above, K province is the "best" when the following equation obtains for W_k :

$$W_k = \max_i W_i \quad i = 1, 2, \dots, 49 \quad (3)$$

Z. Szeliga noted that he assigned the same weight to every indicator analyzed. However, the format of equation (1) testifies to something different. It is easy to notice that the more variable indicators influence the results of classification to a greater extent than the less variable ones.

Further lack of consequence is apparent in the elimination of variables X_2 and X_9 from the set of representative indicators. Z. Szeliga states that he decided to eliminate these indicators because they are very atypical in nature. This suggests that Z. Szeliga had an intuitive idea of the classification he was to prepare and subordinated his further actions to this idea.

The above considerations prompted me to attempt ranking the provinces according to the level of welfare of the population on the basis of the Hellwig method [2] which is frequently used in ranking multivalued objects. It should be noted that this is not the only method that can be used; interesting remarks concerning the methodology of analyses of this type can be found in [1] and [3]. The author's research was broader in scope than that by Z. Szeliga. The provinces were ranked on the basis of different sets of representative indicators and of data for 1980, 1981, 1982 and 1983.

Ranking for the above years was done with a view to determining whether the changes occurring in our country in the 1980s are a major influence on the ranking of provinces according to the welfare level of the population.

The Table of Welfare for 1980 - 1983

In this section of the article, we will discuss the results of ranking individual provinces of Poland according to the welfare of population. The ranking was done by the Hellwig method; it is based on the data from the Statistical Yearbooks of Provinces published in the years 1981, 1982, 1983 and 1984. The study was done for the two following sets of indicators:

$$A = \{X_1, X_3, X_4, X_5, X_6, X_7, X_8\}, \quad B = AU \{X_2, X_9\}$$

where X_1, X_2, \dots, X_9 denote representative indicators similar to the ones used by Z. Szeliga in his study. Indicator X_1 (infant mortality per 1,000 births) is the only destimulant in the sets A and B. The results of research by the author of this paper are presented in table 1.

Along with the rank of individual provinces in the classification based on 7 representative indicators in 1982 and 1983, table 1 also includes the results of ranking done by Z. Szeliga on the basis of the 1983 data.

It is apparent that the two classifications for 1983 differ significantly (see, for example, Bielsko-Biala, Czestochowa, Jelenia Gora, Katowice, Piotrkow, Plock, Slupsk and Zielona Gora provinces). It appears that this is the result not only of the different ranking methods, but also of Z. Szeliga's

failure to standardize the values of representative indicators. Careful perusal of table 2 suggests that increasing the number of representative indicators did not cause essential changes in the rankings for 1980, 1981 and

Table 1. Table of Welfare of Provinces (on the basis of 7 indicators)

Pozycja a)	1982		1983		Klasyfikacja Z. Szeliga (1983) c)
	województwa b)	d_i	województwa b)	d_i	województwa b)
1	Katowickie	0.3661	Katowickie	0.1941	Stoleczne
2	Wałbrzyskie	0.6997	Stoleczne		warszawskie
3	Stoleczne		warszawskie	0.2446	Poznańskie
4	warszawskie	0.7055	Legnickie	0.2769	Wrocławskie
5	Leszczyńskie	0.7230	Poznańskie	0.2899	Leszczyńskie
6	Lubelskie	0.7246	Wrocławskie	0.3353	Legnickie
7	Gorzowskie	0.7270	Leszczyńskie	0.3981	Katowickie
8	Gdańskie	0.7343	Łódzkie	0.4060	Łódzkie
9	Poznańskie	0.7400	Wałbrzyskie	0.4157	Gdańskie
10	Ślupskie	0.7455	Krakowskie	0.4291	Szczecińskie
11	Koszalińskie	0.7531	Gdańskie	0.4643	Ślupskie
12	Legnickie	0.7545	Zielonogórskie	0.4853	Krakowskie
13	Szczecińskie	0.7593	Opolskie	0.4869	Wałbrzyskie
14	Krakowskie	0.7605	Szczecińskie	0.4896	Bydgoskie
15	Jeleniogórskie	0.7686	Jeleniogórskie	0.5142	Olsztyńskie
16	Chełmskie	0.7692	Bydgoskie	0.5226	Opolskie
17	Opolskie	0.7748	Bielskie	0.5351	Koszalińskie
18	Przemyskie	0.7796	Kaliskie	0.5352	Białostockie
19	Bydgoskie	0.7806	Białostockie	0.5412	Zielonogórskie
20	Elbląskie	0.7895	Lubelskie	0.5568	Lubelskie
21	Białkopodlaskie	0.7966	Częstochowskie	0.5571	Kaliskie
22	Suwańskie	0.7969	Koszalińskie	0.5576	Skierniewickie
23	Kaliskie	0.7996	Ślupskie	0.5641	Jeleniogórskie
24	Wrocławskie	0.8013	Olsztyńskie	0.5656	Gorzowskie
25	Kieleckie	0.8039	Gorzowskie	0.5774	Płockie
26	Zamojskie	0.8072	Skierniewickie	0.6041	Elbląskie
27	Tarnobrzесьkie	0.8088	Toruńskie	0.6360	Pilskie
28	Konińskie	0.8090	Pilskie	0.6384	Białkopodlaskie
29	Bielskie	0.8151	Konińskie	0.6667	Toruńskie
30	Nowosądeckie	0.8290	Białkopodlaskie	0.6790	Bielskie
31	Pilskie	0.8314	Elbląskie	0.6809	Suwańskie
32	Krośnińskie	0.8319	Suwańskie	0.6949	Zamojskie
33	Zielonogórskie	0.8462	Płockie	0.7116	Częstochowskie
34	Olsztyńskie	0.8468	Chełmskie	0.7221	Konińskie
35	Białostockie	0.8476	Sieradzkie	0.7333	Chełmskie
36	Toruńskie	0.8568	Zamojskie	0.7349	Wrocławskie
37	Płockie	0.8644	Kieleckie	0.7469	Łomżyńskie
38	Częstochowskie	0.8735	Rzeszowskie	0.7605	Siedleckie
39	Rzeszowskie	0.8782	Wrocławskie	0.7863	Sieradzkie
40	Piotrkowskie	0.8810	Piotrkowskie	0.7986	Ciechanowskie
41	Ciechanowskie	0.8848	Tarnobrzесьkie	0.8061	Kieleckie
42	Wrocławskie	0.8960	Łomżyńskie	0.8064	Radomskie
43	Łódzkie	0.8980	Siedleckie	0.8116	Rzeszowskie
44	Ostrołęckie	0.9005	Radomskie	0.8160	Krośnińskie
45	Tarnowskie	0.9082	Ciechanowskie	0.8321	Tarnobrzесьkie
46	Skierniewickie	0.9178	Przemyskie	0.8710	Przemyskie
47	Siedleckie	0.9275	Tarnowskie	0.8781	Piotrkowskie
48	Radomskie	0.9294	Krośnińskie	0.8883	Tarnowskie
49	Łomżyńskie	0.9755	Ostrołęckie	0.9385	Ostrołęckie
	Sieradzkie	0.9960	Nowosądeckie	1.0703	Nowosądeckie

Source: author's calculations

Key:

a - rank,

b - province,

c - ranking by Z.Szeliga (1983)

Table 2. Ranking of Individual Provinces in the Tables of Welfare for 1980, 1981, 1982 and 1983.

Nazwa województwa a)	Klasyfikacja na podstawie 7 cech b)				Klasyfikacja na podstawie 9 cech c)				Klasyfikacja Z. Szeliga d)
	1980	1981	1982	1983	1980	1981	1982	1983	
Stoleczne warszawskie	1	1	3	2	1	1	2	2	1
Białkopodlaskie	38	31	20	29	38	32	8	27	27
Białostockie	19	20	34	19	14	17	34	13	17
Bielskie	18	23	28	16	13	15	20	10	29
Bydgoskie	17	16	18	15	17	14	11	18	13
Chełmskie	36	29	15	33	34	29	17	35	34
Ciechanowskie	37	38	40	44	36	39	39	45	39
Częstochowskie	23	25	37	20	22	24	43	15	32
Ełbskie	27	27	19	30	30	27	25	36	25
Gdańskie	9	9	7	10	7	8	18	9	8
Gorzowskie	16	17	6	24	18	18	4	25	23
Jeleniogórskie	14	15	14	14	25	23	14	23	22
Kaliskie	24	18	22	17	19	16	30	12	20
Katowickie	7	2	1	1	2	2	1	1	6
Kieleckie	33	35	24	36	33	36	9	34	40
Koninские	31	30	27	28	31	31	29	28	33
Koszalińskie	15	14	10	21	15	13	19	22	16
Krakowskie	8	6	13	9	6	6	16	7	11
Krośnieńskie	47	47	31	47	44	40	23	44	43
Legnickie	5	5	11	3	4	4	7	4	5
Leszczyńskie	11	8	4	6	10	7	3	6	4
Lubelskie	26	26	5	19	16	21	6	16	19
Łódzkie	7	12	42	7	8	10	45	8	7
Łomżyńskie	42	46	48	41	42	46	46	40	36
Nowosądeckie	49	49	29	49	48	49	22	49	49
Olsztyńskie	21	19	33	23	23	19	31	21	14
Opolskie	10	11	16	12	9	11	12	11	15
Ostrołęckie	48	48	43	48	49	48	38	48	48
Piłskie	25	21	30	27	20	20	37	26	26
Piotrkowskie	43	39	39	39	39	38	33	37	46
Płockie	28	33	36	32	29	35	32	31	24
Poznańskie	3	3	8	4	3	3	13	3	2
Przemyskie	42	41	17	45	46	45	10	47	45
Rańdomskie	41	43	47	43	41	41	48	42	41
Rzeszowskie	30	36	38	37	27	33	41	32	42
Siedleckie	45	44	46	42	47	47	40	43	37
Sieradzkie	34	37	49	34	32	37	49	29	38
Skiermiewickie	29	32	45	25	28	28	44	20	21
Śląskie	22	22	9	22	26	22	15	24	10
Suwałskie	32	28	21	31	35	30	26	33	30
Szczytyńskie	6	7	12	13	11	9	21	17	9
Tarnobrzęskie	46	46	26	40	45	44	28	39	44
Tarnowskie	44	45	44	46	43	43	42	46	47
Toruńskie	20	24	35	26	21	26	35	30	28
Wąbrzeźskie	12	18	2	8	24	25	5	19	12
Wrocławskie	39	40	41	38	40	42	47	41	35
Zamojskie	4	4	23	5	5	5	27	5	3
Zielonogórskie	35	34	25	35	37	34	24	38	31
	13	13	32	11	12	12	36	14	18

Source: author's calculations

Key:

- a - province,
- b - ranking on the basis of 7 indicators,
- c - ranking on the basis of 9 indicators,
- d - ranking by Z. Szeliga

1983. We can also see the peculiarity of rankings for 1982 compared to those for other years.

The above can be easily explained if we take into account the specific socio-economic situation in the country in 1982. The tables of welfare based on the data for 1980, 1981 and 1983 are very similar. For example, comparing the results for 1980 and 1983 in the rankings based on 9 representative indicators, a marked "advance" can be registered only for the following provinces: Biala Podlaska (from 38 to 27), Kalisz (from 19 to 12) and Skierniewice (from 28 to 20). It should be stressed that for all the years in question, with the exception of 1982, the same provinces made up the top 10 and the bottom 10 on the list.

In the period under review, life was the best in the capital city and Katowice, Legnica, Poznan and Wroclaw provinces and the worst in Przemysl, Nowy Sacz, Siedlce and Ostroleka provinces.

The research described above fully bears out the statement that the standard of living for the inhabitants of industrialized areas is, in the tangible sense, much higher than that of the population of rural areas. Looking for an answer to the question posed in the introduction to this paper, we observe that the changes underway in Poland in the 1980s thus far have not been a considerable influence on the ranking of provinces according to the welfare level of the populace.

In summation, it should be stated that a comparison between the results obtained and those of similar studies for 1970s appears interesting.

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9761

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BOOK REVIEW CRITICIZES 'SLUGGISH' PACE OF REFORM

Warsaw PRZEGLAD KATOLICKI in Polish No 31/32, 3-10 Aug 86 pp 1, 5

[Review by Leon Bojko of book "Reforma jako innowacja społeczna" [Reform as a Social Innovation] by Wladyslaw Jermakowicz and Rafal Krawczyk, MAW, Warsaw, 1985: "Playing at Reform"]

[Text] Only the most "ardent fans" of economic reform follow the debates on this subject, and with less and less interest. Reform, let us admit it, succeeded in disillusioning and boring people even before it produced the promised changes in the economy. In the book by Wladyslaw Jermakowicz and Rafal Krawczyk, "Reform as a Social Innovation," I read the following: "The easier it is to make changes, the shorter the time allotted for making these changes. There is a negative example of this: The WOG (Large Economic Organization) reform, in which the procedure for making the changes was spread out over a 3-year period and never was actually concluded." In the face of this example, what will the present reform be like, considering that it has already reached the venerable (for reform) age of three-and-a-half years, its end is still not in sight, and its beginnings, let's face it, were not particularly successful?

I will probably be accused of having a "definite bias." It may be. But what should my attitude be when, for example, I read in ZYCIE WARSZAWY, in a report on a meeting of the Polish Economic Society's (PES) executive committee: "The transformation of an economic system is not an easy or simple procedure. It requires new attitudes and new habits. If the pace of change is too slow, then--as we read in the draft of the PES position--the sense of the reality of reform, confidence in the future, and belief in the consistent nature of reform actions, are eroded."

The opinion of the Economic Advisory Council on the assumptions of the economic plan for 1986-1990 (ZYCIE GOSPODARCZE, 15 Jun 86) begins with the sentence: "The main goal of the entire policy for the 5 years should be to restore to the economy its ability to develop." And throughout this entire text there are phrases such as "...it appears very strained, if not unrealistic," "...is this well-balanced?", "...this is particularly unrealistic if we assume...", (...). After all, it was precisely this ability

to develop, postulated in 1986, which economic reform was supposed to restore to the Polish economy, and this was supposed to take place during 1983-1985. Those were the assumptions of the 3-year plan (...).

The pronouncement: we have reform--or we do not have it, what stage of advancement it is in (if it really is "advanced"), is extremely risky if only because this a still-undefined concept. It permits very wide discretion in interpreting various actions in the economic sphere, permits everything to be called "reform." In extreme cases, as Jermakowicz writes, retail price increases are called "price reform" and an increase in hauling fees is called "tariff reform." Thus we can only speak of progress in reform after we have made a thorough examination of past promises and compared them with present results. The plan for 1983-1985 (more precisely, the thrift and anti-inflation program) promised that single-digit inflation would be reached in 1985. Now this target has been postponed to 1990. Strict linkage of wages to work results still remains in the realm of postulates. Enterprises are being very severely "penalized" for efficiency, highly inefficient enterprises still do not fear the consequences of their lack of resourcefulness, and the number of raw materials under state control is steadily growing (...).

Which does not prevent calling what is now going on in the economy "the process of applying reform." Elimination of the Office of the Government Representative on Economic Reform and transfer of his powers to the Planning Commission would lead one to believe that the reform should already have been "applied." But that is just how it is with Polish reforms. I recall the previous economic reform, the Large Economic Organizations system, which, in connection with my duties, I described several years ago in ZYCIE GOSPODARCZE. It was very promising--and it quietly died, to the steady accompaniment of propaganda that "the process of application is underway."

"The economic system," writes Wladyslaw Jermakowicz, "was subject to a process of perpetual change during 37 years. At one time these changes tended towards a system governed by directives, at another time they tended towards a system of parametrical institutional programs. They came in three characteristic change cycles in the years 1945-1955, 1956-1970 and 1971-1980. Each cycle began with comprehensively applied or inherited changes liberalizing the economic system, and ended with suspension of the changes applied and replacement of the management team."

It is not for me to judge at which point of reform (...) we are. I leave that to the experts. They, too, will probably not reach a unanimous conclusion. For us, who have to deal with the economy basically in two places--at the paymaster's desk and at the shop cash register--the constant inquiries as to society's desires are interesting (...).

Prof Zdzislaw Sadowski (erstwhile deputy minister for economic reform) said the same thing: "Administrative action is unavoidable when there is no orderly system of prices. But for social reasons, namely the necessity of halting the rise in the cost of living, prices cannot be allowed to rise too quickly and universally. Herein lies the main difficulty. After all, in the last analysis, efficiency must go hand in hand with social justice, and this social justice cannot be implemented. And that is the answer to the question

why we began reform at all. Putting price relationships, rules for establishing wages, etc., in order, carries with it a heavy load of necessary concessions in favor of social justice, as I, and not just the economists, interpret society." (ODRODZENIE [Rebirth], 21 Jun 86, editorial discussion: "Is There Reform or Isn't There") Or, reform would have come much faster if it were not for the resistance of society, which, it turns out, does not like price increases. A discovery worthy of Adam Smith, or Keynes...

What astounds me in the economic discussions is the agreement by all of those taking part, regardless of their political, economic or other views, on this one point: Society is conservative, moderate, too attached to the protective functions of the state--and therefore, passive--to consent, without resistance, to genuine reform. How do the economists, and not just the economists, know this? True, questionnaire surveys have been made from which various interesting conclusions can be drawn, but they are of more or less the same value as a tailor's measuring-tape in describing an individual. One can determine height, and thickness of waist, but mathematical ability? One can speak of society's true desires only after observing its behavior (...).

Commercial trade was nationalized as a result of the great "battle for trade," and private trade, and genuinely cooperative trade, did not nationalize spontaneously and from the bottom ranks. Production cooperatives in the 1950's were not very successful, and now, despite unprecedented preferences for the "sector," the peasants are not eager to join them. Private horticulturists, thanks to whom we have the best market in that subsector (...) are not the least bit coddled, either by the state or by society. And they are functioning. It is sufficient for a little freedom to appear for private entrepreneurship and private enterprises grow in no time. No one, it seems, has to force them to such action by administrative directives. The MEGAT Federation was established with great difficulty, with no small opposition from the workers' councils of those enterprises which were efficient and could get along without the tutelage of the ministry.

There are truly so many examples of striving for self-dependence, for freedom in management, that attempts to justify the slow progress of reform by society's attitude can be rejected with complete equanimity. Finally, a good many decisions have been made in this country without asking society for its opinion; for example, the large investment program in the metallurgical industry (although we are producing more steel per capita than the United States). These investment decisions had a greater impact on the fate of reform than the universal demands for an improvement in the standard of living of retirees and health and education workers--which did not materialize.

The question of the "protectiveness of the state" and the relationship of society towards it, is worthy of a separate analysis. But we can say that placing on it even part of the responsibility for lack of progress in economic reform is inappropriate, to put it mildly. That might be said, I repeat, in the case of freedom of choice. Because freedom of choice is constantly shrinking, even in such a basic area as the freedom to choose a workplace. To say nothing about the freedom to choose a director, establish a plan for production, a development program for an enterprise, or cadre policy, etc. Many decisions are made without even such a highly imperfect method of

obtaining social acceptance as the "consultation" method. "Decentralization phases," Jermakowicz writes, "were introduced to the accompaniment of enormous social revival. They began with street disturbances, a growth of social tensions, and changes in the ruling teams. Centralization phases, on the other hand, were born in the silence of offices, appeared gradually by way of changes in institutions, laws, people, etc."

(...) Wladyslaw Jermakowicz showed that in every one of the past developmental cycles such a reversal occurred in very similar circumstances and was therefore more rapid, the more quickly the economy recovered balance. Now the economy somehow cannot recover this balance, cannot achieve the ability to develop. Hence it is not possible to be silent about it. But is this a sufficient guarantee for reform?

Wladyslaw Jermakowicz, in a very excellent way, analyzed all of the past postwar cycles of the Polish economy. (...) "This cyclical shifting of systems "from wall to wall," from one state to another, taking on the form of a spiral of institutional changes, has for years been a fascinating puzzle absorbing the attention of economists, sociologists, politicians, and various specialists on the theory of organization and management, the future, "conceptualization", and problems of life itself." A puzzle which has not yet been solved. Probably only "life itself" will solve it, although I am not sure that this solution, in the final analysis, will be pleasing to anyone.

The game about the economy is truly a fascinating social game. And this was beautifully described by Jermakowicz when he used the example of the last match in 1980-1982. Is this game still being played? Perhaps, But as I said earlier, fewer and fewer people are participating in it, and the interest is steadily waning. The workers, and it is they in the last analysis who will determine the shape of the economy, participate in a very narrow, but because of that, decisive, range: at the paymaster's table. The economists in the Economic Advisory Council write of this with great distaste, calling it "wage claims." (...) To demand of a worker that he accept, without resistance, a suggestion that "he rid himself of excessive demand" (obviously, not through an increase in supply--you know we have a highly inefficient economy), is naive. I believe that the game for society's awareness on this point has been lost and there are mournful complaints about society's low economic awareness with new demands for "political education." Finally, the most highly aware societies educate themselves economically exactly the same way the Poles do--with their pay envelope and at the cash register. Appeals to women to compare what they spend in a supermarket now and 4 years ago are a powerful political weapon, and such comparisons have cost more than one president his job.

To justify difficulties in reforming the economy by current economic problems is warranted, but not entirely. There are a good many countries in the world which deserve admiration for the speed with which they are able to pull themselves out of a situation which, it would seem, is hopeless. Brazil, for example (to whom we owe more than just a little). Why, then, is our reform dragging? I don't know. I didn't find out from Jermakowicz and Krawczyk. And what will happen to reform?

"Attempts to introduce new solutions began each time with great propaganda outcry and ended with quiet folding of banners and licking of wounds suffered by reformists in many encounters and skirmishes. In some cases, even the dissolution of the commission responsible for applying "reform" was not announced. It died alone, in obscurity, deserted by everyone, reflecting on its former superiority." After the last match, as a "fan of reform" I have one big complaint about the team: It played sluggishly, allowed the opponent to cheat it right on its own goal, and what is worse, it constantly issued optimistic reports. This unceasing optimism to a large degree contributed to the present state. It looks like I will have to root for someone else. Brazil, for instance.

9295

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SMOLE SAYS 'MEASURES' FUTILE WITHOUT MARKET DEVELOPMENT

Belgrade EKONOMSKA POLITIKA in Serbo-Croatian 4 Aug 86 pp 18-20

[Interview with Janko Smole, former finance minister and member of the LCY Central Committee, by Milos Markovic: "The Market's Angels and Devils"; date and place not given]

[Text] The need for the Yugoslav economy to be open to the outside world has by and large always existed in an unstable equilibrium with the self-sufficient and complacent stubbornness about being special in all things. This latter concept, however, has been seriously shaken by the imposed contact with the world in the form of postponement of the payment of debts and the arrangement with the IMF, but it continues to be unshaken in its conviction that in the midst of these passing troubles we can play by our own rules of the game. The rules of the world market should be seen only as unjust coercion on the part of foreign creditors to whom one must unwillingly yield from time to time. We talked about the market, the world, and ourselves with Janko Smole. However well known our subject might be, it is customary in a publication to refer to his position or occupation. We might satisfy the requirements by mentioning Smole's former positions (finance minister and member of the LCY Central Committee), but even that is not the customary procedure. But perhaps these difficulties in introducing the subject of our interview provide an interesting illustration of Yugoslavia's "divorce from the world," in which the job Smole does today is not a rarity at all. We might best describe it by the phrase "independent consultant," which means that Smole's knowledge and experience are available to all those interested--from the government administration to the banks and enterprises. We are presenting the interview, which was conducted by Milos Markovic, in a freely edited version.

EKONOMSKA POLITIKA: Quite a bit of time has now passed since the moment when the domestic economy confronted the impossibility of repaying the foreign credits on schedule. The rescheduling of the debts has certainly provided a needed respite. How has that respite been used so far?

Janko Smole: Well, some kind of respite really was necessary. The only question is what aside from that is signified by the rescheduling over such a long period of time? It also means that the capital borrowed becomes sterile, that it does not go toward development, and interest is being paid to foreign creditors over a very lengthy period. Of course, we can go on rescheduling the

debts. So long as we are paying the interest, that is in fact in the interest of the creditors. Yet in so doing we renounce an inflow of new capital and new development projects--and this in an era when new projects are a technological imperative.

The rescheduling of the foreign debt has also been demobilizing to a considerable extent. The challenge of the debt crisis implied changes in the structure of the economy, inclusion in the world market, and many other things, but the sense of this being an imperative is falling off. The rescheduling has pushed aside the basic problems which were imposed by the large debt and the impossibility of paying it back. Why, for instance, hasn't the debt crisis improved the disposition to engage in joint ventures with foreign partners? Instead of that the outlook still prevails that we are sufficient unto ourselves, that we can undertake new technologies and increase exports even without foreign knowledge, experience, and capital. However, I think that there is no way we can do that without ties with foreign trading partners at critical points of development. Joint ventures, of course, have their price, but it is less than taking credit. Nor do I believe in the argument that we will open up when we have enough foreign exchange. We will never have enough unless we open up the market to foreign goods, capital, consultants, and so on.

EKONOMSKA POLITIKA: What is the behavior of countries with a similar debtor status, a similar economic potential, and similar level of economic development?

Smole: We sleep through all the crises. We did not even understand the energy crisis from the standpoint of optimum energy consumption or the financial aspect. I am not saying that there were not individuals who spoke or wrote about that in the right way, but as a society we did not comprehend the energy crisis. Much the same is true of the debt crisis. We perceive it only as the threat of an outdated system to the developing countries, which is fine, but it also has other aspects. It also means that investment should be done differently, pace has to be kept with technological development, and there have to be ties with foreign trading partners. Hungary and China, for example, have understood that. In our country, however, there is a very high degree of belief that we are sufficient unto ourselves, that we have a large potential which only needs to be better utilized. The unfortunate truth is that a majority of our export products are out-of-date. Of course, our technology and quality can continue to be sold, but only at the corresponding and steadily dropping price.

By contrast with us, many developing countries are in the midst of an export expansion, in the process of restructuring the economy, which is based much more on know-how, on technological intelligence. I am talking about India, about the countries of ASEANA, about South Korea, about Taiwan, about the countries of Latin America. We know about the latter mainly only from the standpoint of their being large debtors, but those are countries which are going out on the world market with a completely new palette of industrial products which are very sophisticated from the technological standpoint.

EKONOMSKA POLITIKA: However dramatic the very comparison might be that does not go beyond a description of the situation, it would probably be still more serious if we confronted the causes. But first it would be better if you described the appearance of the economies which are managing to respond to the challenges of the world market.

Smole: Unlike us, who still believe that the way out lies through large enterprises, that we only need to unify the small plants, today's technology also necessitates a large number of small and flexible enterprises. In the wood industry, the furniture industry, or a large segment of the metal-manufacturing industry, for instance, production that is computerized or is managed by computers affords high flexibility in small production runs. Today the investment in people and knowledge is decisive. Thus small enterprises are dominant even in the state-of-the-art technology. Of course, it is not a question of major innovations, but of thousands of everyday, tiny, and worthwhile innovations. Small enterprises are important to that atmosphere of innovations, but they are also important as the environment for the big enterprises. The little ones can go under or develop without there being any national or regional tragedy, while the fall of the large ones takes down an entire region. In our context it is "unacceptable" for the large ones to fail, since that would shake up entire monopoly structures headed by the political elites.

If there are to be more small enterprises, certainly the constraints should be removed from private initiative, but more flexible forms should also be established within the socialized sector. We have to find the best ways of investing foreign exchange earnings in enterprises. Past labor would have to be returned in some form of share in income, relations would have to be established on the basis of the profit earned. Otherwise we remain in the illusion that all our problems will be solved with large export programs. Experience shows, however, that only the haphazard play of the market discovers the real potential for exports, that production operations promising for export which no one ever gave a thought to are born in small enterprises.

EKONOMSKA POLITIKA: You do not hold back from using the expression "haphazard play of the market"?

Smole: The haphazard play of the market is absolutely indispensable. Of course, this is not the haphazardness of the 19th century, but a market with a true order and all the necessary institutions. The market is unfair, but it is also the whip which drives things forward. We, however, go on imagining some kind of specific Yugoslav market. Some people do not like real interest rates, others do not like the free circulation of capital, and so on.

Interest rates might really be a good illustration. They certainly must be at least a compensation for the money borrowed; otherwise the integrity of socialized resources is lost. Current theory says that first we should bring down inflation and only then introduce real interest rates. The only trouble is that I don't know who will fail to borrow money in the meantime. Incidentally, how are we to fight for optimum use of working capital when there are immense inventories, all kinds of speculation, and a low turnover coefficient?

This is not the policy, however, that is preached by the little ones, but by the big ones, who are also building everything on the basis of anticipated inflation. Political support, then, is on the side of those who are constantly taking credits--the balance of power in our country is on the side of large debtors. In the world, for instance, they say that the development of cooperation is not even possible without the pressure of interest. After all, why would anyone bother to develop it if he is able to hold everything in inventories? Finally, when interest rates are not realistic, who is going to be willing to save?

Let us go back to the market. In our country the official thought is that it has to be some kind of ideal institution insofar as we accept it at all. We are ready to accept only its virtues. We would like a market belonging to the angels, but it has to be a market of the devil, since it is the devils that have the strength and boldness for new ideas. Our market is a market of angels under the protection of the government. When they turn into devils, that same government and policy immediately penalize them.

EKONOMSKA POLITIKA: What, then, is the real range of the various "package programs"? Will they really chase out the devils, or will they chase out the market along with them?

Smole: It is difficult to enact any measures at all if the market does not develop. Measures can embody only an adjustment, since the market is truly unfair, but this does not mean that prices, interest rates, and all the rest can be set voluntaristically. Or, if we have a market which is supposed to achieve dinar convertibility only gradually, then that can only be a "market" embodying voluntarism, differing rates of exchange, and so on. Convertibility is not a long-range matter, but the business of one program, a program that would be all-encompassing. And certainly this would involve calculation as to whom this would favor and in what way. What we do is just to constantly announce the market, real prices of the factors of production, or convertibility. As though we are sending a message to the economy: Get ready and one day we will turn on the water. No one ever learned to swim that way. Much the same situation applies to an inseparable part of the market--financial discipline. In our country both the government and many enterprises fail to meet their obligations; there is a political force which can decide who is to pay debts and who isn't. But without the payment of debts, that is, without financial discipline, it is utterly impossible to establish who is healthy and who is sick. Those are the ABC's of economics. What sort of measures, then, can be enacted at all in the context of universal voluntarism, in a situation in which you cannot even determine individual business performance?

Finally, the market demands competition, since it is only through free competition that the vigorous enterprises can solve the problem of their own expansion. The conditions would have to be created so that those vigorous enterprises can take over (purchase) the buildings, equipment, and people of the firms going bankrupt. In the world at large this is the customary manner in which successful firms obtain equipment considerably less expensively. In any case, unless there is bankruptcy, there can be no change of the economic structure.

EKONOMSKA POLITIKA: Now that you have mentioned bankruptcy and the devaluation of the property of such enterprises, we must at least in passing dwell upon ownership relations in our system. Specifically, who would be selling the equipment of the bankrupt firms, and who would pay for that loss of a portion of property?

Smole: The question of risk is in general one of our big problems. Of course, there would have to be some kind of insurance against cases of bankruptcy, that is, a portion of personal incomes would have to be set aside in a fund for that purpose. If business is successful, the profit would be divided, if it is unsuccessful, the loss would be made up out of that portion of personal incomes. After all, where is the risk when someone else is making decisions on investment projects, if after failure it can be attributed to him, and the loss will be paid by the entire society? This is the worst form of state-ownership relations--ownership is governmental or regional so long as everything is going well, but when things go bad, then the losses are charged to society. Given that attitude toward the risk, we must inevitably have this kind of system of regional monopoly tied up with political structures which "govern" the country. Incidentally, it is beyond dispute that the market is a blow to the influence of political factors, although those factors like to accuse others of having too much power--one day the bankers, the next day the technocrats, and so on. Today the greatest "technocrats" are outside the economy and production. To be sure, everything that I have said up to now was a part of that reform back in 1965; that is, it is nothing new. At that time it was proclaimed some kind of neoliberalism, and similar outlooks have stayed around even to this day.

EKONOMSKA POLITIKA: If this has in a sense be a digression, we might go back to current events. In connection with the market, then, you really do not believe much in gradualism, in measures which have been "adapted to the real situation," and which "postpone the market" to some indefinitely distant future when the conditions would have been created for it?

Smole: No, I don't, and I have already spoken about that. Nor do I believe in a gradual reduction of inflation. You know, all of that is like a big and expensive lunch everyone is trying to get up from and leave before the time comes to pay the check. Of course, the debt has to be paid, and we are all paying for it together. And now people come along and say that there will be more such lunches, it is just that the food won't be quite as good. That is pretty much how our gradualism appears to me.

Instead of that, an entire program ought to be drawn up with all the calculations as to who would be hurt, who would be temporarily injured and how much, what consequences the program would have in particular enterprises, industries, or regions. The economy would have to have those computations in advance if it was to have the time to adapt. In Japan, for instance, they had the program for revaluation of the yen a year in advance; the economy knew about all that in advance, and everyone drew up his own program for adapting to the new situation. I think that the Yugoslav economy has the capacity to adapt, not to the present system in which contagious speculation is encouraged, but to the material consequences of a specific program for recovery. Today,

however, the situation is such that everyone considers himself to be healthy and that others should be given medical treatment. All those healthy ones need is just some "package program," a little relief with interest rates, a few export incentives, the writing off of a few debts, and so on--while the others, the sick ones, should be treated with all available means. Everyone, for example, is today in favor of unrestricted prices on his own goods but wants even tighter administrative control when it comes to other people's goods. What is needed more than anything to make a break with that system, however, is a firm political commitment.

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INCREASED STRIKES, ROLE OF TRADE UNION DISCUSSED

Zagreb DANAS in Serbo-Croatian 12 Aug 86 pp 9-14

[Articles by Milan Jajcinovic, Goran Litvan, Ivo Bilandzija, and Neca Jovanov; first paragraph is DANAS introduction]

[Text] Why have there been more and more work stoppages recently and are there signs that they are escalating into broader and better-organized social dissatisfaction?

Milan Jajcinovic: From the Work Stoppage to the Strike

Today's Yugoslav is a strange spiritual amalgam made up of the ethos of the hajduk, of whim and wish, of "I kiss your hands, master," of Partizan honor (the "Red Shawl"), of the shockworker's "heave-ho," of consumer fever, of the apathy of the crisis, and of the ideological range of the local color of the republic or nationality. But although Yugoslavia is a country of its own particular contradictions, it is as a worker that the average amalgamated Yugoslav is sketched. In the SFRY the working class is in fact the nominal holder of power. And there is not a single political meeting, gathering of people, celebration, or whatever assembly that it is not mentioned and not appealed to. In spite of that everyday ritual the workers' pay is getting thinner and thinner, and his plate is getting emptier and emptier. As the cavern of the crisis widens out, the life of the workers gets worse with each passing day. Every day they feel how "we are still falling," they grumble, they stifle their curses from time to time through clenched teeth and show patience, becoming accustomed to the shortage, and they perceive the crisis as a kind of "natural disaster which will thunder past and cease in and of itself." It seems they believe in the biblical story about the nine lean and fat cows. They do not believe in other stories. This summer they have been making an ever more public display of their deprivations, dissatisfaction, and frustration. Machines are being shut down, there are more and more protest meetings and "work stoppages," and there is a demand for justice. As though the summer heat and nervousness favored the throwing up of enough sparks to light a frustrated dissatisfaction.

Although the numerousness and frequency of this summer's "work stoppages" (which is our euphemism for a strike) may seem surprising to some people, still it is nothing new or unknown. The first worker strikes in the new Yugoslavia occurred way back in 1958. At the coal mines in Trbovlje-Hrastnik and

Zagorje ob Savi in that year the miners refused to go down into the mines. That is how it began. And then the strikes began to multiply. They were not spoken about in public, and even when this was done, the word "strike" was not mentioned. For years an attempt was made to cover up these outbreaks of worker dissatisfaction, to conceal them as a kind of socialist shame. Not a single official word reached the public about them, since "what is in the newspapers does not officially exist." Only in the last few years have people begun to speak about strikes as a part of reality rather than about some phantom. In particular, there was public discussion of strikes last summer and certainly this summer--when the medical students went on strike in Maribor, when the machines stood idle in the "3. Maj" SOUR in Rijeka, in "Dalmatinka" (Sinj), in "Metal" in Vinkovci, at the "Zora" RO in Zagreb, at the "Crvena Zastava" Timber and Woodworking Combine (Krusevac), when the vehicles stood idle in the Sisak "Auto-Promet," when the personnel stopped work at the Zagreb bus station.... These events seem to have refuted once and for all the illusions (which even today are spinning around in some heads) about an idyllic socialism in which there is no friction, disagreement, or conflict, where everything has to go smoothly and without a hitch, and if it doesn't, then at least one should create the impression that that is the case. Presumably that is why 11 years passed after the first strike before strikes began to be talked about in public. The strike--probably because of the scars of political excommunication--is still looked upon with suspicion, suspiciously and fearfully. And as soon as something happens, it is almost a rule that the director and the obstinate political structures will immediately get together. An attempt is made to settle the matter on the spot. Usually in such a way as to try to satisfy the demands of the persons employed. Then the dust settles (by and large), the excitement dies out, and everyone goes his way, but the real causes are not established, nor are even the immediate pretexts of the stoppage. Yet a strike does not come about with no basis whatsoever. Often it can be predicted in advance. As we are told by Vladimir Arzenšek, who for many years has studied industrial conflicts, interest structures, and alienation, only one-fourth of the workers failed to make their demands known to anyone before the strike, three-fifths (60 percent) had advised the leadership of the OOUR of what they were seeking, while 14 percent had addressed the bodies of self-management. (It is indicative that none of the strikers had advised the trade union or League of Communists of their demands.) But it is interesting that 36 percent of the workers say that their demands had not been taken up by a single body. Workers' councils and working groups spent the greatest amount of time on this. Asked to state why their demands had not been met, the workers (93 percent) said "underestimation of the demands and procrastination in solving the problem." The most frequent reason for commencement of a strike is economic in nature--money! Primarily these are low personal incomes, dissatisfaction with the analytical evaluation of jobs, and dissatisfaction in the computation and payment of personal incomes (payment promised, but not realized; a low level of information about personal incomes, etc.). Arzenšek found that all of 91 percent of strike participants give economic motives as the decisive factor in their participation. They obtained similar findings in the Council of the Federation of Croatian Trade Unions, ascertaining that the distribution of personal incomes was last year the immediate pretext for 88.1 percent of all strikes in Croatia (in all, there were 134).

As one goes up the hierarchical ladder, there is a corresponding change in the perception of the pretexts and causes that led to the escalation of dissatisfaction, that is, to a strike. Thus Professor Arzenšek found that workers' council members gave as the principal reasons "a lack of information and low personal incomes," while members of the leadership referred to "poor work discipline and low personal incomes." It is beyond doubt that recurrences of the old consciousness are breaking through here. It is not possible to conceal the fact that a considerable number of management personnel are inclined to view the strike as a disciplinary problem and that at the same time there are "few who think that underdeveloped self-management was a main cause of the strike." And all of four-fifths of the respondents declared that their action was directed against the management. No one said that he was opposed to the bodies of self-management, which only shows that their efforts were also directed against the existing power structure in the OUR or work organization. This clearly shows that the low proportion of workers in the institutional structure of social power is still having an impact on their social position; that is, often distribution is not made according to the results of work, but according to one's place on the hierarchical ladder. And it is precisely here--we are told by Prof Neca Jovanov, who is "the expert among experts when it comes to strikes"--that we find the true deeper cause of worker strikes, regardless of whether the workers who are striking are in all cases truly aware of the real reasons for their poor financial position or the real causes of their action as strikers.

It can be said today that it is accurately stated that "those who make decisions have never gone on strike." Why would they protest when they make the decisions, that is, when they have the power? Power is precisely the criterion which divides members of what is formally the same political and self-management structure into two sides, into two poles. The entire problem revolves around the distribution of social power. The heart of it lies precisely in that global distribution of possible influence. Research shows that the workers are really deprived of it, although it belongs to them institutionally. The reason why the worker protests is that his legitimate power has been usurped. This is the root of all strikes. Their cause, then, lies on the global plane, while the pretext is at the local level. Since the conflict--this is shown by the strikes--cannot be resolved within the institutional framework, it jumps outside the framework and a "wildcat" resolution is attempted, one that lies outside the institutions. Since social power is involved, and this is power alienated from its declared holders, Professor Jovanov said that at the microlevel we have a "open class conflict," while at the global level of society we have a "concealed class conflict."

Strikes in our country do not last long. In a day or 2 the conflict is usually straightened out. But fractures frequently remain. Thus Prof Vladimir Arzenšek, who has studied the strike's effectiveness, obtained data to the effect that only 13 percent of the strikers feel that their demands were entirely met, 56 percent judge that this was done in part, and 31 percent find that their demands were not met or that their position had in fact deteriorated. A fourth of the workers whose demands were entirely met were even thinking about leaving the work organization, and this percentage was even higher among those whose demands had been met only partially. They represented

almost one-half. In spite of the final, individual, and collective result, a large majority of the workers (86 percent of the strikers and 81 percent of the rest) feel the strike to be justified. That is also the opinion of 60 percent of the members of workers' councils. But of only 21 percent of the members of professional management! Striking workers have a more favorable attitude toward the strike than those who have never struck. The opinion "Strikes would help the workers in our country to settle certain issues" was favored by 78 percent of the former and 52 percent of the latter. Those who have gone on strike also have a less authoritarian orientation (they do not concur in the view: "It is better to put up with things than to attempt to change social conditions which are hindering people from achieving their goals," nor with the opinion: "Orders and opinions of superiors should be considered final") and they are also more resolute in demanding that the trade unions perform their representative function, i.e., that they represent the interests of the workers in dealing with the professional management of the work organization. Certainly this is a reaction to the constant attempts of the trade unions to play a double role--to be the representative of the worker, but also not to object to the management (here there interests are usually closer to the management than to those they are supposed to represent).

"The trade union," Professor Arzenšek believes, "is not an autonomous worker organization. There is practically no participation in the trade union whatsoever. Ninety percent of the unskilled and about 75 percent of the young workers are not trade union members at all. Among its active members are 75 percent of top management. But the most essential thing to determination of the class character of the trade union is the fact that it has not been the organizer of worker strikes. Which explains why the phenomenology of Yugoslav strikes is as it has been established by Neca Jovanov. Workers have true awareness only of those causes of their unfavorable political and social position which are to be found in their work organization. Worker dissatisfaction arises from economic deprivation, and that is becoming ever more relevant and ever more obvious with every passing day. All of this does not mean that there will necessarily be an open industrial conflict. In the situation where the industrial conflict, and here I am thinking above all of the strike, has not been recognized, the workers are left nowhere to go but to flee into apathy. Which is why we confront the phenomenon of such a massive passive resistance.... This is an alternative form of expression of worker dissatisfaction. And that will be the case so long as the trade union, as a body for political socialization, is unable to place the uncertainty and frustration of the workers in some general context of class interest and class conflict.

Today it is thought even by some in the trade unions themselves that they are not dealing (or not dealing sufficiently) with the problems of the workers, that they have become bureaucratic and have become "an organization without a constituency." Which is why the workers have been left to themselves. Everyone gets along as best he knows how and is able, literally acting out the slogan: "Get along the best you can, comrade!" Some establish sick leave in order to be able to "moonlight," others steal a little (just look at the criminal reports in the newspapers!), still others do not pay their rent, their water bills, their electricity bills....

"Our institutional system," writes Dr Josip Zupanov, professor, "does not allow for polarization; it leads to a fragmentation of interests and a dispersion of dissatisfaction. It is characteristic of it that the dominant problems of the individual and of the OUR are resolved at the level of the opstina, and the institutional system at that level is a skeleton for development of informal networks in which friendship and patriarchal connections both in the opstina and in the OUR are dominant. Everything, indeed even trivial matters, is resolved at the informal level. In those dense networks of mutual exchanges and interdependences every individual, relying on the broad social welfare (a dense network of social rights), works out his own "project" for staying alive, and that further increases the stabilizing function of the institutional system. Explosion presupposes collective action, and the institutional system not only does not allow for autonomous action (it does not allow the creation of autonomous organizations for collective action), but in fact it diminishes the willingness for collective action (since collective action would signify a violation of one's own "project" for survival, and few people are ready to take such a risk.

In opposing collective action with repression and tolerating individual channels for venting dissatisfaction, the system successfully suppresses the motivation for collective action. Collective action can be successful only if it is oriented toward changing the situation--but most of the working population does not want change from a society of leveling and socioeconomic security which guarantees them many rights along with a minimum income--as compared to the uncertainties of economic differentiation and a change in the criteria used for evaluation that is implied by a market economy. Collective action, which would include the strike, always occurs in our country (at least up to now) at the microlevel. Up to now there has not been a single general strike. And there probably will not be one because of "the personal survival project" and the symbiotic role of the trade unions--in spite of the tighter economic measures.

Of course, it is not our purpose here to issue a plea in favor of strikes or to exalt them in a major way. This is only an attempt to establish certain social coordinates. And they show that the workers will continue to show their dissatisfaction within their own factory grounds, that the number of such protests will certainly increase, but that for the present the preconditions do not exist for the workers to break free of the tutelage of the government. In Yugoslavia there will continue to be strikes: brief, limited, and sporadic. Perhaps there will continue to be the highest number in the most advanced republics, but it is difficult to believe that these miniature strikes can grow into any concerted and general dissatisfaction. At this point one can speak about the workers and about the not yet attained ideal-type awareness of being "a class for itself," of a society of traditional scarcity where poverty is often impregnated with patriotism and pride, of the fat and lean biblical cows, of a fear of repression, of an atomization of society, of the predominance of the republic and the nationality over the class interest, of the wily cleverness of a system which by satisfying (the strikers) compels their future devotion, and so on.

Regardless of anyone's desires, strikes are a part of socialism and of its reality. To anathemize them at this point as some kind of socialist object of ridicule is stupid and reactionary. Especially since it has turned out that they are not guided by any sort of hostile intentions. What is more, they have usually been a correction of a bad situation. It is impossible to judge ad hoc to what extent the most recent "work stoppages" have been a thrust of reality in that direction. One thing is certain--they were not accidental or "irrelevant." Just as it is certain that there will be more of them in this (or a similar) economic environment--when the American Nobel prizewinner Lawrence Klein (on the basis of the misery index) is moving us from Europe to Asia. Whether strikes are recognized in formal law and institutionally or not (as young people in Slovenia have demanded), they will exist so long as it is not possible to resolve problems of existence within the socially given framework. Although today's Yugoslav is a strange spiritual amalgam, he knows that they revolve around money--but he also feels that he is underneath something more powerful than he is. And so long as that is the case, there will be strikes!

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Goran Litvan: Why Did They Go on Strike in Vinkovci?

The strike of an entire collective of 175 workers, which lasted 18 working days, deserves particular attention. It happened in the work organization "Metal" in Vinkovci.

The metalworkers stopped work on 14 July after they each received the guaranteed personal income of 31,000 for their work in June. The bitterness was accentuated by the surplus that was achieved in June. However, the burden of 18 million dinars of uncovered losses from the previous year, together with 70 million dinars of additional losses in the first half of this year, were too much to be overcome by 1 month's effective performance. The law was relentless, but the workers were persistent. And the opstina structures were too slow to say the least. It was more important to prevent Zagreb television from coming (but television did come from Novi Sad) than to resolve the problems which had accumulated for years, together with the inventories of trailers and other products on the factory grounds.

Receivership was established for the third time at "Metal" on 1 August. The comrades from the opstina finally deigned on that day to come and listen to the workers, and at the same time to present to them the new manager during receivership. But on that (in)auspicious occasion they all but came to blows. Tomislav Ledic, president of the opstina, explained to the workers that they would either work for 31,000 dinars a month, or bankruptcy would be declared. It was clear that the atmosphere was superheated. "They did not let us leave," Ledic was to tell republic officials 3 days later. "It is not true that we were waiting for them 'with knives,' but that they wanted to leave in a demonstrative way," the workers said.

At one time "Metal" was an exemplary collective with 350 workers (today it has half as many). The workers say that establishment of the "Standard" OOUR in

the neighboring enterprise "Graditelj" was a key factor in the beginning of the stagnation. The best personnel from "Metal's" work unit that had the largest capital surplus went over to the other organization, which was offering better conditions, and "Montaza (Assembly)" was eliminated. "They plucked out the heart of our collective," the Vinkovci metalworkers said unanimously, and then they most frequently mentioned the former and present chairman of the executive council of the opstina assembly (who is also the director of "Graditelj"). They felt that the present chairman had collected political points behind their back, since he had built his reputation as a successful business executive by lifting up "Graditelj" (he came there in 1978 as a manager under receivership) at the expense of "Metal's" "Montaza." They accused the former chairman of having systematically destroyed their collective over several years. The chairman of the Vinkovci Opstina Committee of the Croatian LC confirmed that they were right, explaining to them that one of the charges in the "party indictment" against the former chairman (he received his last warning) was his responsibility for the situation at "Metal."

After the "heart was plucked out" matters went downhill. Lack of discipline and idleness prevailed, "Metal" had one professional management team after another, temporary measures were adopted twice, and inappropriate financial rescue programs were inaugurated. The only ones who benefited from this situation were the professional managers of the collective who in the workers' opinion had been well-remunerated for their idleness, while at the same time they had enriched themselves in various ways at the expense of the ever thinner pay envelopes of the workers. And thus on 14 July, as a logical consequence of the erroneous policy over many years, the strike began which set a record for the number of working hours lost, and it ended only on 3 August, after an assembly of the workers which was attended by Ante Milovic, president of the Executive Council of the Croatian Assembly, and Ivo Bilandzija, chairman of the Council of the Federation of Croatian Trade Unions. They came to Vinkovci to anticipate the workers' plans to take two buses to go directly to the parliament in order to protest opstina indifference and procrastination. And, of course, because of the guaranteed 31,000 dinars. The previous night had been a sleepless one for the most outspoken workers of "Metal," who were summoned to the police station for questioning. They received no responses to the question as to what kind of treatment that was and why it was necessary (accompanied by much emotion and tears), but Milovic promised to study the entire matter and also to institute proceedings through the Executive Council of the Croatian Assembly to establish responsibility for the situation at "Metal."

The chairman of the committee admitted to the metalworkers that they had "experienced a 'golgota' for the past 5 years," and he placed a large portion of the responsibility on the opstina structures in the previous as well as the present administrations. Although the workers approved the chairman's speech, anxiety about the future remained. There also remained the ominous shadow of possible liquidation which had been announced 3 days earlier by the president of the opstina (and which had also been mentioned a year earlier, which individuals in the Vinkovci leadership recalled with regret: "Oh, if we had done it then!"). But other solutions were proposed. The opstina assembly finally covered the loss of the previous year with an outright grant (this might have been done much earlier), which will leave some room for paying a minimum wage

of 47,000 to 48,000 dinars a month (on a different basis and under the new enactments whose official promulgation is awaited impatiently in Vinkovci), but in the form of an advance which is to be confirmed by work performance. There is also the prospect of an emergency rescue credit of 100 million dinars on which the economy of Vinkovci will undertake to pay half of the interest. The emergency financial rescue program is to be drawn up with urgency so that the workers would know even at the beginning of September where they are and what they have to work with. The workdays lost in the strike are to be made up by the end of the year. But to make up the lost time and the money thrown away it will take a much better thought-out business policy, one more oriented toward the market, and this is what the new provisional professional management board, the third, is in fact announcing.

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Ivo Bilandzija: The Trade Union Cannot Go It Alone

The trade union cannot fight the disruptions of self-management all by itself. This is a problem which everyone should "tackle" more seriously (the League of Communists above all). The same is the case with strikes, since every work stoppage contains within it a disruption in the functioning of the self-management system. Unless a more serious approach is taken, every work stoppage will be spontaneous and anarchic, and that is not a good thing.

Especially since we do not have a work stoppage sanctioned by law. Under the laws in effect this is a violation of work discipline. There is another problem in the fact that everyone--both the director and those from "the opstina"--get up on their feet when dissatisfaction breaks out, but up until that point no one reacts, and this then promotes a kind of legalization of the strike.

In and of itself a strike is neither good nor bad. If, for example, it is not possible to achieve improvement and advancement of self-management in some workplace and there is no other way than to do these things by pressure and a strike, then such efforts should be supported. This ought to be the true role of the trade union. After all, there are many workplaces which are cut off and encapsulated, where self-management has been displaced by tyranny and where a stoppage is the only way to get things off dead center. So, if it is a question of an authentic worker interest, and the trade union is not on the side of the workers and a struggle for that interest, then this is not the way it should be, and the trade union has betrayed its true role. But since the trade union is often an organization without a constituency, its leadership is more on the side of professional management structures than on the worker side, and that is why it is often against the strike (regardless of its character). That is why the stoppages occur spontaneously and in an unorganized way and without real participation of the trade union. There ought not to be a case where the trade union does not know what is happening, when there is intervention from outside the work organization and it comes in the wake of events. But dissatisfaction in such collectives must be of long standing (for a strike to break out most of the people must be dissatisfied), and it is intolerable for the trade union not to know of it.

Strikes break out most frequently in connection with distribution, the drafting of regulations on remuneration, and the payment of personal incomes. And it is interesting that the strikers are often led by people who ought not to be in that position at all on the basis of their work performance and personal attributes. Sometimes in those panic situations it is enough to be the most outspoken to become some kind of leader. It is especially intolerable for idlers to be the leaders. I would like to see the "trade unionists" be the leaders of the stoppages, but of stoppages which would strive for real changes that would bring an improvement. I myself went on strike back in 1969 (and later) at TANG in Nova Gradiska. And the better days for TANG date from that time. Which means that both the occasion and the method were the right ones. Accordingly, palliative solutions lead nowhere. They only "put out the fire," in a month the person spends what he has received, and then things are back where they were.

During stoppages there often is also a kind of worker psychology which I am familiar with since I worked for years as a toolmaker at TANG--and which operates on the principle: "If I squeeze someone, he will have to give in to me!" This "worked" for a long time, but it will not be able to work anymore, since it will not be possible to tolerate demands for something which has not been earned. Up to now we have had cases where a losing enterprise, precisely because it was losing, did not pay its social obligations and at the same time received a portion of someone else's earnings, which acted as a disincentive for those who are performing well and have good earnings (which they must give to others). There are many such things that have to be changed. It must not be our goal to average things out at a level which is not justified and which leans in the direction of some socialism of poverty, but rather to turn in the direction of those who are achieving progress and to follow them.

The measures of the SIV ought to change many things. But it is increasingly evident that they mean that self-management is being pushed to one side more and more. And that is not in the interest of the workers to which we have committed ourselves at all this year's congresses. In this connection the trade union must protect the worker's interest. The interest of the real worker, not the idler (which up to now has often been the case) who gets what he has not earned. Since under the slogan of not increasing social differences the trade union has come out against development of the system it advocated. It will take quite a bit of time to change that old psychology. But changes are necessary, and it is certain that they will cause quite a bit of friction and disagreements. It is likely that there will continue to be strikes. There may even be new and larger strikes if we go on in the same old way--if people are not informed in time about their most important problems, if they do not know what is happening, and do not know what is involved, if they delude themselves that their problems can be resolved only from outside and they themselves do nothing to correct them.

[Box, p 14]

Neca Jovanov: What Is a Strike?

In the late fifties throughout the political structure, and in large part this is true even today, the generation which had just come out of the war and which

had deeply planted within it an idea of socialism as an idyllic society, everything that diverged from that idea was referred to as hostile activity, and when this could not be proven in the case of the strike (since not a single one was carried out with hostile motives), they concealed it from the eyes of the public like dirty laundry. Thus quite a few influential people considered the strike a political blemish for a rather long time, and there is some of that even today. It was asserted in oversimplified terms that the strike under socialism is nonsensical, since "the workers cannot strike against themselves." There was also the interpretation to the effect that the strike is the result of a failure to understand the system of self-management. As though the workers were striking because they did not understand the self-management system, but not because they could not exercise their rights through the institutions and forms of that system. And the long-awaited first public debate turned against the strike: although it was recognized that work stoppages "as a rule are not aimed at abolishing the production relations of self-management," they were blamed for "slowing down the development of self-management relations." Then the formula that came to prevail more and more was this: in most cases the workers had grounds for striking, but they did not have the right to resolve their problems in that way.

In our self-management system worker strikes are mainly the result of the discrepancy between the real and the projected status of the working class in the formal structure of social power and in the distribution of material goods. But it goes beyond that. I think that the projected and the real can never coincide, since if they coincided, then that would mean that people are no longer capable of projecting future development. The question is above all whether the real condition of the workers in the formal power structure and distribution of material goods should be contrary to the official conception of the self-management system and to the position and role of the working class in it. Worker strikes in our country mainly occur because of an increase in the difference between the real and projected condition of self-management socialism. They objectively change the situation toward the projected system of self-management. What distinguishes our strikes from strikes under capitalism and state socialism is that the latter are aimed both against the real and against the projected system. In our case the workers must have the moral and political right to those strikes which speed up achievement of the projected system of self-management.

7045

CSO: 2800/353

RPG-75, 18 ANTITANK WEAPONS COMPARED TO WESTERN AT WEAPONS

Prague ATOM in Czech No 6, 1986 pp 4-5

[Article by Maj Eng Jan Komenda, CSc: "The Czechoslovak-Produced Handheld Antitank Weapon"]

[Text] The dynamic nature of modern combat and the mass employment of armored vehicles require that even units at the lowest tactical level provided with anti-tank defense capabilities. They must have available weapons which are light, transportable, and with good maneuverability, sufficient range, and adequate capability to destroy the target. These opposing requirements are met very well by modern handheld antitank weapons, which suitably augment the system of basic antitank resources. Their use is most effective in combat in villages, in towns, in broken terrain, and in forested areas.

The Czechoslovak-designed RPG-75 handheld antitank weapon [Figs. 1 and 2] has been introduced into the armament of the CSLA [Czechoslovak People's Army]. This very effective, recoilless weapon is used against tanks, infantry fighting vehicles, armored personnel carriers, and other armored enemy targets. The effective range for firing at moving targets is 200 meters and it is possible to carry out effective firing at stationary targets at a distance of up to 300 meters.

The weapon is constructed with a permanently loaded shaped-charge shell within a discardable casing with a smooth bore. The shell is connected with the forward portion of the telescoping extendable combustion chamber with its nozzle. After firing, it is not possible to reload the container in combat and the firer throws it away. The RPG-75 throughout its entire range of operating temperatures shows only a negligible recoil which the firer notices as a vibration of the launch container. The recoil is eliminated by the reactive force of the propellant gases flowing out from behind the weapon.

The RPG-75 is made up of the following basic design units:

- discardable container with mechanical sights, trigger, and carrying strap;
- the cover of the combustion chamber with its propellant charge, mechanical ignition bolt, nozzle, and guidance rail;

--the shaped-charge shell with an instantaneous impact fuse with a mask [as published] safety and self-destruction feature.

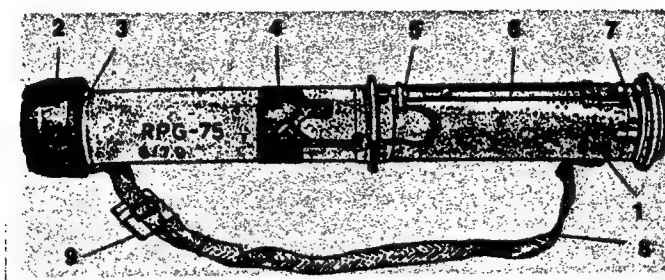


Fig. 1: 68 mm rocket-launched antitank shell model 75 (RPG 75) in the transport position.

Key: 1. Discardable container 2. Rubber muzzle cover 3. Front ring
4. Rubber sight guard 5. Transport safety with seal 6. Launch trigger
bar 7. Rear ring 8. Carrying strap 9. Container with plastic hearing
protection

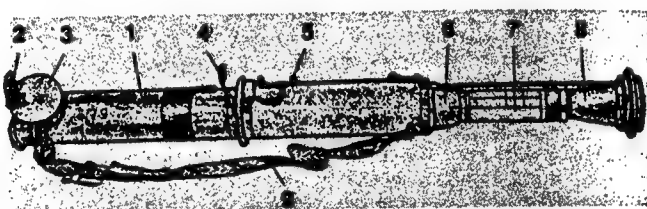


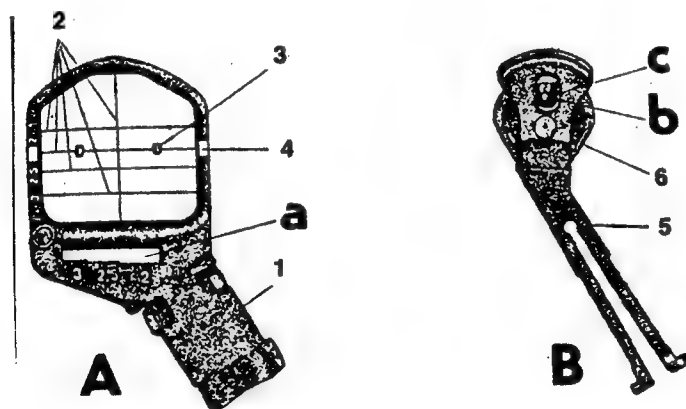
Fig. 2: RPG-75 in combat position.

Key: 1. Discardable container 2. Framework front sight 3. Muzzle cover
4. Dioptical rear sight 5. Trigger 6. Fastener 7. Combustion chamber
8. Nozzle 9. Carrying strap

The discardable container is made of aluminum alloy and has a 68 mm smooth bore barrel. The framework sight is fixed to its front portion and in the middle there is a dioptical rear sight (Fig. 3). The framework front sight makes it possible to establish the desired aiming angle in firing at ranges of 100, 200, 250, and 300 meters. The small leading marks on the sight serve for laying the weapon in firing at a moving target. The aperture in the bottom part of the front sight facilitates estimating the target distance. The dioptical rear sight is equipped with a setting for temperature correction which makes it possible to adjust aiming for accurate firing at various temperatures. The combustion chamber consists of the fastener, the cover of the combustion chamber, and the nozzle. As assembled, it is firmly joined to the shaped-charge shell; this connection is only broken in firing through the pressure of the propellant gases. The propellant charge with the igniter

and grid is located within the combustion chamber. The shaped-charge shell has a body made of aluminum alloy in which the shaped charge is located. Its shape and configuration are optimized from the standpoint of achieving the maximum penetration of armor. On its flight path, the shell is stabilized by the leading surface and the stabilization edge in the rear portion. The impact fuse is made up of the top portion which ensures immediate functioning upon striking the armor and the bottom which is provided with an explosive safety and ensures the transmission of the initiating impulse from the top part of the fuse to the effective charge of the shell. The front, extended top part of the shell ensures both the desired standoff distance and the reliable functioning of the shell even at very sharp angles of arrival in hitting the armor.

The RPG-75 is delivered from the manufacturing plant in a container and closed up into the transport position. The combustion chamber is pushed back into the launching casing and the framework front sight is folded back into the muzzle of the launching casing and covered with a rubber muzzle cover. A rubber protector with a fastener is placed over the folding rear sight. The trigger is secured against premature firing by a lead transport and firing safety.

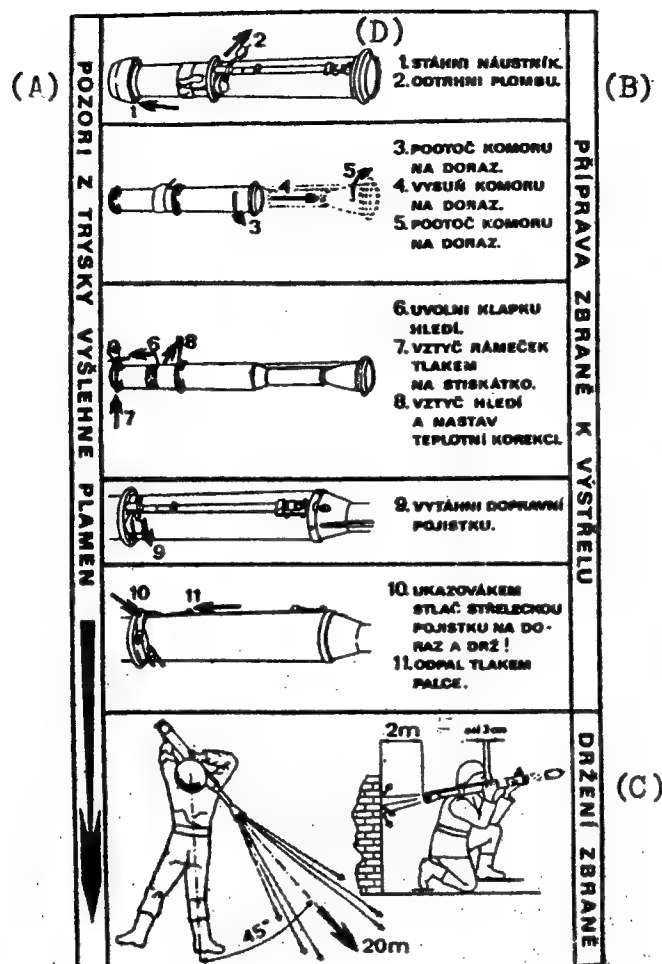


Obr. 3: Mechanická mířidla RPG-75, legenda: A — rámečková muška, B — dioptrické hledí
1 — nosič mušky, 2 — drátky záměrné osnovy, 3 — terčik nadběhu, 4 — terčik
dálky „2“ (200 m), 5 — nosič hledí, 6 — kruhové stavítko teplotní korekce
s dioptrickými otvory c, a — výřezy pro odhad dálky cíle, b — okénko hledí

Fig. 3: RPG-75 mechanical sight.

Key: A. Framework front sight B. Dioptical rear sight 1. Sight mount
2. Aiming base lines 3. Lead points 4. Range marker "2" (200 meters)
5. Sight mount 6. Circular temperature correction scale with dioptical
aperture, a - Notch for target range estimation b - Rear sight peep hole

Before combat use, the firer must put the weapon in combat position by uncovering the launching container muzzle, raising the sights, pulling the combustion chamber out, and freeing the trigger. The precise sequence of work is contained on the instructions plate fixed onto the launching container [Fig. 4].



Obr. 4: Instrukční štítek na odpalovacím pouzdru RPG-75

Fig. 4: Instructions plate on the RPG-75 launching container

- Key:
- A. Attention! Flames come out of the nozzle
 - B. Preparing the weapon for firing
 - C. Holding the weapon
 - D.
 1. Pull off muzzle cover
 2. Pull out lead seal
 3. Turn the chamber to the stop
 4. Pull the chamber out to the stop
 5. Turn the chamber to the stop
 6. Free the sight flap
 7. Pull up the framework sight by pressure on the clasp
 8. Pull up the sight and set the temperature correction
 9. Pull out the transport safety
 10. With the index finger, press the firing safety to the stop and hold!
 11. Fire with pressure of thumb.
 - E. From 3 cm

When firing, the firer rests the weapon on his shoulder and holds it in both hands by the launching container. Firing can be carried out while standing, kneeling, or prone. The firer must be careful to maintain the safety principles, which are extraordinarily important for RPTZ's [handheld antitank weapons]. In firing, a stream of propellant gases and particles of the nozzle cover shoot out of the combustion chamber nozzle to the rear. Therefore, there must be no easily combustible materials within a distance of 15 meters behind the weapon or any personnel within a distance of 30 meters. In firing from a trench or other open cover, the rear opening of the nozzle must be at least 2 meters from any solid wall [or impediment]. Before firing, the firer must take a position which puts his body outside the reach of the stream of outflowing gases. The method of taking a prone firing position is obvious from Fig. 4. To protect one's hearing during firing, the firer puts special plastic protectors, which are carried in a container on the weapon's carrying strap, in his ears.

The RPG-Nh-75 weapon with a replacement shaped-charge shell which has the same ballistic properties as the live shell, but is made of nonexplosive materials, is used for live firing in training. The remainder of the weapon is the same as the basic [combat] version, including the removable propellant charge. With the exception of its impact on the target, the RPG-Nh-75 is therefore comparable with the functions of the RPG-75, including the effect on the firer of the accompanying manifestations of firing. The training version RPG-Cv-75 is used for firing training where the barrel for a 7.62 mm pistol bullet is placed in its container. The handling of the training weapon, its preparation for firing, and the firing itself take place the same as with the RPG-75. However, the training weapon is loaded with a pistol bullet just before firing and can be used over and over again.

The training model RPG-Sk-75, which is made exclusively of nonexplosive materials, is used for training in preparing the weapon for firing, aiming, launching, and stopping firing.

The basic tactical and technical parameters of the RPG-75 are contained in the table. Comparison with other data indicates that the RPG-75 is fully comparable with other types of handheld antitank weapons for one-time use which have been introduced into the armament of foreign armies. It is one of the best designed weapons on a global scale.

Table 1

ZÁKLADNÍ TAKTICKOTECHNICKÉ ÚDAJE RPTZ JEDNORÁZOVÉHO POUŽITÍ

(1) Typ RPTZ	(2) Stát	(3) Ráže odpalujícího pouzdra d/ráže střely ds [mm]	(4) Hmotnost [kg]		Maximální rychlost V_{\max} [m.s ⁻¹] (7)	Délka [mm] v dopravní / bojové poloze (8) L_{zd}/L_{zb}	Maxim. účinná délka střelby D_{uc} [m] (9)	(10) Průraznost homogenního pancíře	
			(5) kompletu m_z	(6) střely m_s				H [mm]	$H \cdot ds^{-1}$ [mm] (11)
RPG-75	(12) ČSSR	68	3,2	0,8	190	630/890	300	300	4,4
RPG-18		64/61	2,6	1,4	144	705/1050	250	300	4,9
M-72	USA	68	2,14	1,13	145	630/950	200	270	4,1
VIPER	USA	70	3,73	1,4	257	695/1130	300	350	5,0
ARMBRUST	NSR	78/67	6,3	1,0	220	850	300	300	4,5
PANZERFAUST 3	NSR	60/110	12	3,6	250	1200	300	400	3,6
LAW-80	V. Brit.	94	8	4	330	1000/1500	300	600	6,4
ARPAC-MAS/A	Francie	72	1,25	0,7	76	400/550	100	250	3,5
ACAR-100	Francie	63	2,5	1,2	90	500/670	100	300	4,8
ACAR-200	Francie	67	3,5	1,8	180	750/1200	200	320	4,8
MINIMAN	Švédsko	74	2,9	0,9	160	900	250	300	4,1
AT-4	Švédsko	84	5	1,9	290	1000	300	300	3,6
PICKET	Israel	81	6	4,2		760	500	350	4,3
C-90 B	Španělsko	90	3,2	2,3		800	200	450	5,0

Table 1: Basic tactical and technical data on one-time use handheld antitank weapons [RPTZ]

- Key:
1. RPTZ type
 2. Country
 3. Launching container caliber/shell caliber
 4. Weight
 5. Total
 6. Shell
 7. Maximum speed
 8. Length in transport/combat position
 9. Maximum effective firing range
 10. Penetration of homogenous armor
 11. Caliber
 12. USSR
 13. Great Britain
 14. France
 15. Sweden
 16. Israel
 17. Spain

6285/12948

CSO: 2400/369

SMALL-ARMS SILENCERS DISCUSSED

Prague ATOM in Czech No 6, 1986 pp 8-9

[Article by Eng Josef Hejda: "Silencers for Small-Arms"]

[Text] Currently small arms designers are working on increasing their capabilities such as, for example, armor penetration capability, effective range, etc. At the same time they are trying to reduce the intensity of the sound of the shot, especially for small arms which are used in special tactical situations, for example, during reconnaissance. Small arms equipped with special devices reducing the intensity of the sound of the shot are often called "noiseless." This term is inexact. A shot is always accompanied by sound arising from the flow of the propellant gases between the walls of the barrel and the projectile, as well as during the rapid exit of those gases from the barrel after the projectile has been fired and during its flight, when a shock wave occurs. Sound is also made when moving metal parts in the weapons strike each other, for example, when the hammer strikes the firing pin, when the bolt strikes the bottom of the magazine, and with automatic weapons when the locking piece strikes the lug during its backward movement and loading, etc.

For modern small arms, it is possible by using special silencers to reduce the intensity of the sound of the shot so that a person with average hearing will not notice the sound at a distance of about 50 meters in a quiet atmosphere. Currently, when there is a tendency to design and use small-caliber small arms, the distance is even less.

When the speed of the bullet is less than the speed of sound, the basic source of sound for the shot is the rapid outflow of the gunpowder gases from the barrel after the bullet has been shot. In this case, it is necessary to reduce the speed at which gunpowder gases are emitted from the barrel.

On the other hand, when the projectile speed is greater than the speed of sound, the source of sound from the shot is primarily the shock wave created by the flight of the bullet from the barrel. In this case, it is necessary to reduce the initial speed of the bullet below the speed of sound. This is achieved by using special cartridges with a reduced charge of gunpowder or by modifying the weapon.

Designers are directing their efforts mainly at silencers for weapons with an initial bullet speed lower than the speed of sound.

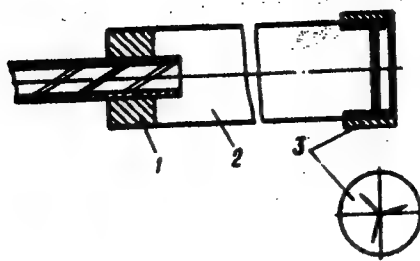


Fig. 1 Cylindrical silencer with a rubber membrane: 1. Mounting nut
2. Cylindrical chamber 3. Rubber membrane with slot

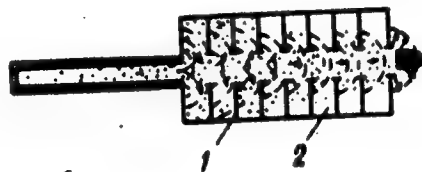


Fig 2 Multichamber silencer: 1. Partition 2. Chamber

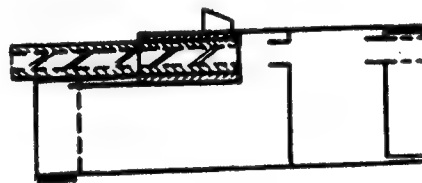


Fig 3 Two-chamber silencer mounted off-center on the barrel

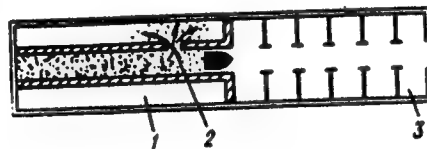


Fig 4 Multichamber cylindrical silencer with backflow port: 1. Rear chamber 2. Port in barrel with backflow vent for exit of gases into the rear chamber 3. Front multichamber portion of silencer

Such silencers ensure a change in conditions for the exiting of the gunpowder gases mainly at the time when the bullet ejects. At that instant the pressure of the gases in the barrel, at a temperature of approximately 1000°C , is about 200 kp/cm^2 . Experts state that when this pressure is reduced to 1.9 kp/cm^2 , the shot will be almost noiseless and therefore they are working to reduce the pressure of the gases flowing out of the barrel behind the bullet by either increasing the space in which they are found or reducing their temperature.

The most simple silencer for the sound of a shot is a cylinder placed on the muzzle portion of the barrel and covered in front with a rubber membrane with a slit (Fig. 1). The volume of this cylinder must be substantially greater than the volume of the barrel opening. With this silencer, the gunpowder gases overcome the resistance of the rubber membrane and spread out in the cylinder and therefore most of them escape from it after the bullet has been shot. But this type of silencer does not reduce the intensity of the sound of the shot sufficiently and the rubber membrane is also soon destroyed.

The same principle, that is, increasing the area for the gunpowder gases to spread, is used in multichamber silencers (Fig. 2) in which the bullet passes through chambers set up one after the other and thus a gradual reduction occurs in the pressure of the gunpowder gases. In silencers with a number of chambers, part of the gunpowder gases passes through the openings in the partitions before the bullet and therefore its effectiveness is also not adequate, but it is possible to reduce further the temperature of the gunpowder gases by filling the front chambers with fine steel wires.

Multichamber silencers increase the weight of weapons and make placement of the sights more difficult. This is the reason for using, for example, a two-chamber large-volume silencer mounted off-center in regard to the barrel (Fig. 3). Its function is similar to the previous silencer, but it gets away from the difficulties in locating the sights.

To increase the strength of the silencer and to achieve a smooth drop in the pressure of the gunpowder gases, the multichamber silencer with a backflow vent is used (Fig. 4). The pressure of the gunpowder gases flowing out of the barrel behind the bullet causes the backflow vent located in the tube of the multichamber silencer to open, through which the gases escape into the first (rear) chamber. In the other chambers, the pressure of the gases, delayed behind the bullet, gradually drops and this substantially reduces the intensity of the sound of the shot. Where this type of silencer is a fixed component of the weapon, the port with the backflow vent can be directly on the barrel.

In other silencer design, partitions on the shape of a funnel are used (Fig. 5). This directs the gunpowder gases emitted from the barrel to the edge of the silencer cylinder, from which they pass through a cooling aluminum powder and out of the openings in the silencer cover into the atmosphere.

Another design utilizes the turbulence of the gases in the silencer to reduce the pressure of the gunpowder gases and to delay them behind the bullet. Special partitions in the shape of a spiral direct the gases into a rotational transverse movement which extends the path of their flow, during which they are also cooled off. This substantially reduces the intensity of the sound of the shot. Currently silencers have been developed in which gases are cooled and gas reduced by means of porous metals. With other types of silencers, various flaps and pistons are used between the barrel and the surrounding environment. There are also proposals for silencers in which special funnels are used to direct the gases to pistons which compress springs.

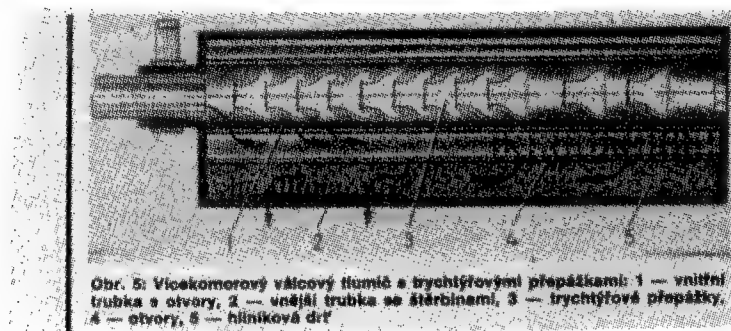


Fig. 5 Multichamber cylindrical silencer with funnel-shaped partitions: 1. Internal tube with ports 2. Outer tube with slits 3. Funnel-shaped partitions 4. Ports 5. Aluminum powder

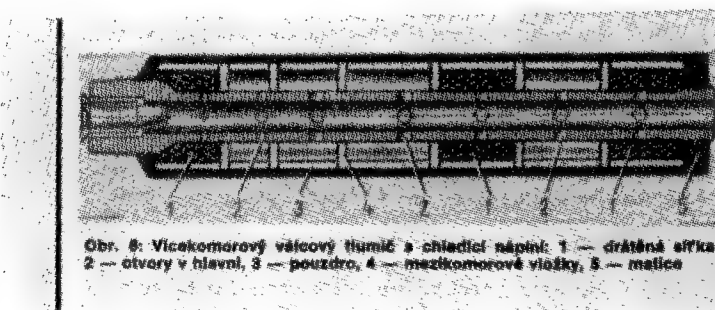
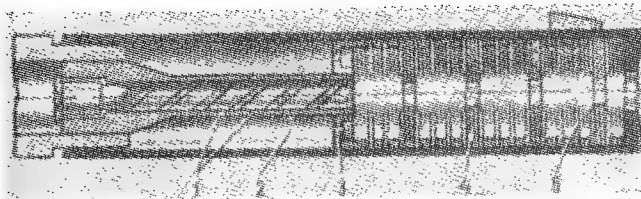
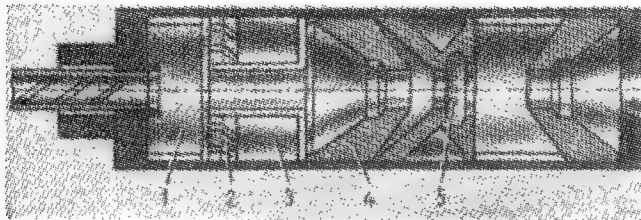


Fig. 6 Multichamber cylindrical silencer with a coolant filler: 1. Wire network 2. Ports in barrel 3. Container 4. Interchamber inserts 5. Threaded nut



Obr. 7: Vícekomorový válcový tlumič se speciálními přepážkami: 1 — otvory v hlavní, 2 — zadní komora, 3 — otvory pro průtok plynů ze zadní do předních komor, 4 — mezikomorové gumové přepážky, 5 — kovové disky s otvorem pro průlet střely

Fig. 7 Multichamber cylindrical silencer with special partitions: 1. Ports in barrel 2. Rear chamber 3. Ports for the flow of gases from the rear to the front chambers 4. Interchamber rubber partitions 5. Metal discs with opening for passage of the bullet



Obr. 8: Vícekomorový válcový tlumič pro turbulenci prachových plynů: 1 — zadní komora, 2 — turbína, 3 — komora pro stlačené plyny, 4 — speciální vložky pro směřování toku plynů, 5 — otvory

Fig. 8 Multichamber cylindrical silencer for turbulence of gunpowder gases: 1. Rear chamber 2. Turbine 3. Chamber for compressed gases 4. Special inserts for directing the flow of the gases 5. Ports

All of the above types of silencers reduce the intensity of the sound of the shot, but are considerably strained when firing in bursts, which causes them to heat up greatly and thus reduces their useful life. In addition, they must be matched in design to the given type of weapon.

Based on Soviet materials.

6285/12948

CSO: 2400/369

ION-COATING TECHNOLOGY VIEWED

Prague ATOM in Czech No 6, 1986 pp 22-23

[Article by Lt Col Eng Vojtech Hruby, CSc., and Eng Miroslav Novak: "Ion Coating"]

[Text] Currently on a global scale there are more and more immediate questions about how to conserve energy and scarce materials and to increase the overall quality of products. Attempts directed at economizing in the use of raw materials and materials used in the field of engineering in the last few years are leading to the development of highly rationalized technology in all the industrially developed countries of the world. This trend also is showing up in the field of chemical and heat processing of steel and has a significant part in extending its lifespan. The utilization of individual methods of surface modification to date and their predicted development in forthcoming years are shown in Fig. 1.

The above predictions indicate that by the year 2000 a marked decrease will occur in some traditional technologies, such as cementing and nitro-cementing. On the other hand, it is predicted that there will be great development in the new, progressive technologies, including procedures in plasma, vacuum-processing, and all methods of creating coatings. In the future technologists will focus their attention on effective utilization and combined usages and primarily on the best adaptations of the properties of a layer or coating for a specific strain on a component.

The lifespan of a component directly depends on wear on its surface, the appearance of fatigue cracks, and corrosive effects. All of these influences begin taking effect at the surface or subsurface layers of the component and it is therefore highly desirable that this phenomenon be prevented or limited by improving the properties of the surface layer. Increasing the lifespan of a component several times over by applying various coatings means not only a direct savings in material and labor, but also substantially increases reliability, further extends the lifespan of the entire unit or assembly until scheduled maintenance, and reduces the consumption of spare parts. This represents a savings of production capacity, a reduction in losses from idle time, and a reduction in costs for repairs and maintenance. In view of the fact that methods of coating are literally springing up and growing like mushrooms after rain, this article is meant to contribute to

an easier orientation in this field. We can divide coating into two different technologies: chemical and physical (see Fig. 2).

Obr. 1: Prognóza vývoje chemickotepeelného zpracování

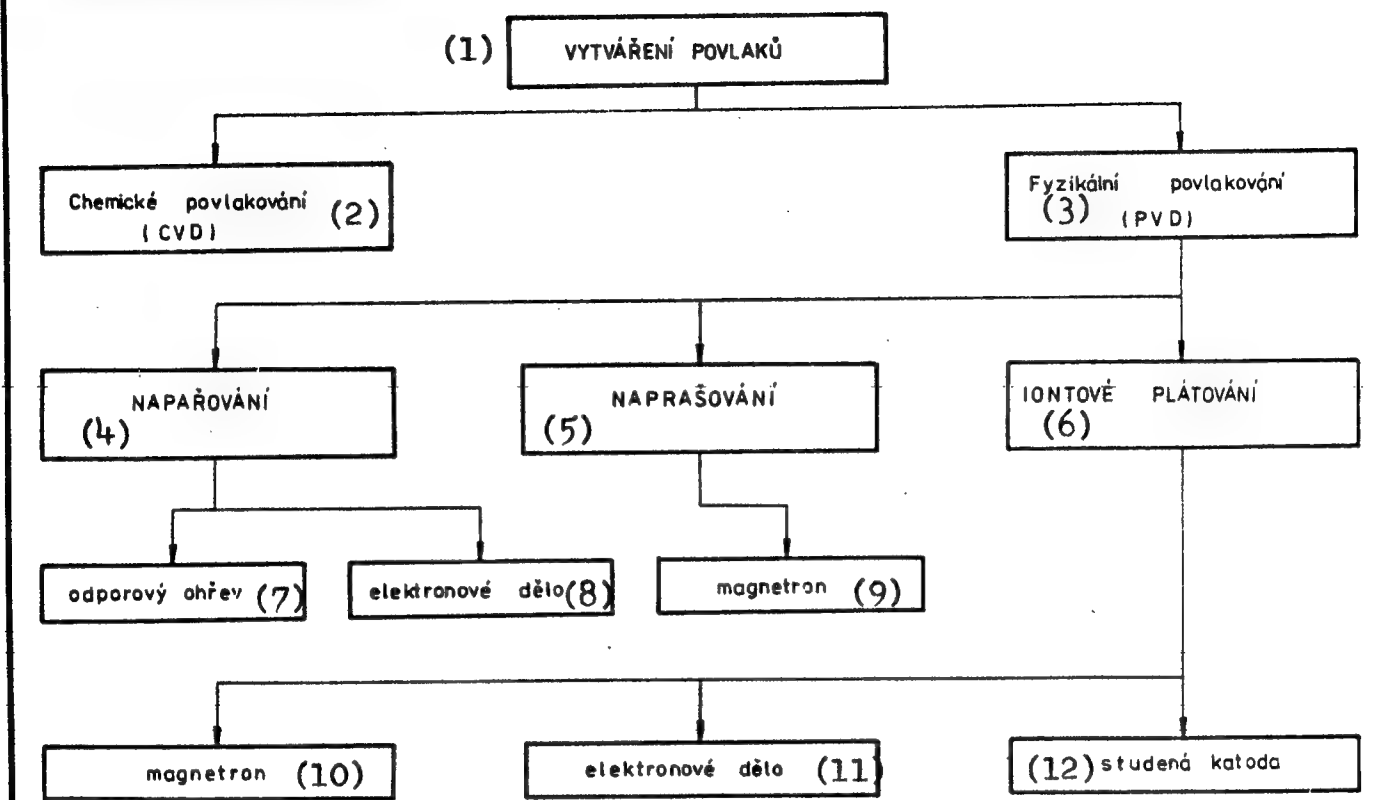


Fig. 1: Prognosis of the development of chemical and heat processing

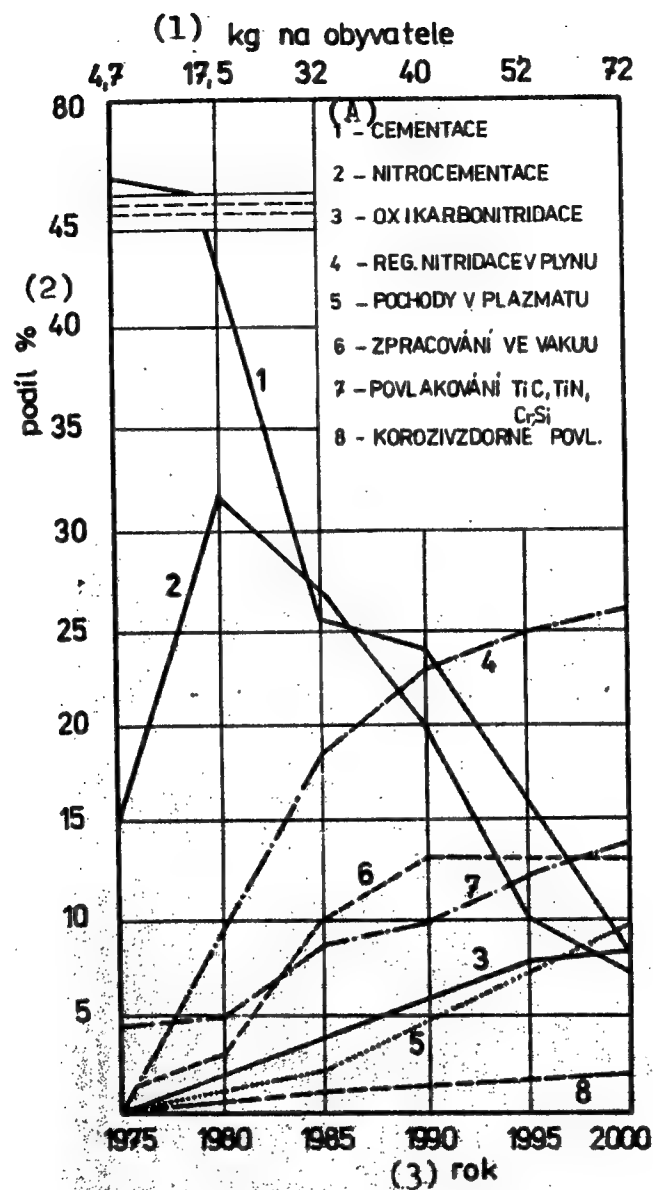
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|---------------------------|-----------------------|
| Key: 1. Creating coatings | 7. Resistance heating |
| 2. Chemical coating (CVD) | 8. Electron gun |
| 3. Physical coating (PVD) | 9. Magnetron |
| 4. Vacuum deposition | 10. Magnetron |
| 5. Powder deposition | 11. Electron gun |
| 6. Ion Cladding | 12. Cold cathode |

The CVD (Chemical Vapour Deposition) method of applying a coating, that is, by deposition of the coating by a chemical reaction in the gaseous phase, is one of the very common methods. This method provides hard coatings of true contours of the highest purity which have excellent adhesion to the basic material. The process takes place at temperatures around 1000°C and is relatively demanding in terms of energy. The time for coating lasts several hours and the resultant waste materials are harmful from an ecological standpoint. By reducing the pressure during coating and getting the right proportions to the reacting gases, it is possible to achieve even and nonporous layers even on shaped and hollow bodies. On the basis of information to date, a second method, that of PVD (Physical Vapour Deposition) or

physical deposition in the gaseous phase, looks very promising for industry. This method uses metals in the solid state and we distinguish between three methods depending on how they are transformed into the gaseous phase, which are vacuum deposition, powder deposition, and ion cladding.

For vacuum deposition, it is necessary to create a vacuum of 10^{-3} Pa in the working chamber and the material to be used for coating is put into a gaseous state by resistance heating or an electron gun (Fig. 3). The atoms of the evaporated material move in almost a linear direction toward the component, which they hit with an energy of 0.1 to 1 eV and condense there. The vacuum-deposited coatings have a low adherence and this method is therefore used in optics, for example. The speed of applying the coating is very high and it is possible to use vacuum deposition on all elements, as well as various alloys. With alloys, the coating composition is dependent on the tension of the pairs of individual elements and does not correspond to the composition of the original material.

Another method, the so-called powder deposition, also takes place at a reduced pressure of 10^{-3} Pa where a slow discharge occurs between the surface of a magnetron connected as the cathode and the grounded component (Fig. 4). The positive ions created in this discharge strike the surface of the magnetron, from which they knock out individual atoms of the powdering material which then strike the component with an energy of 10 eV. The coherence of the coating with the component is better than with vacuum depositing and the speed of powder depositing a coating is increased by using magnetic fields. Of all the PVD processes which are used for coating, powder deposition is considered to most versatile method, since it is possible to make powder deposits on metals, alloys, compounds, semiconductors, and insulators. This method is used a lot, for example, in electrical engineering in the production of component bases.

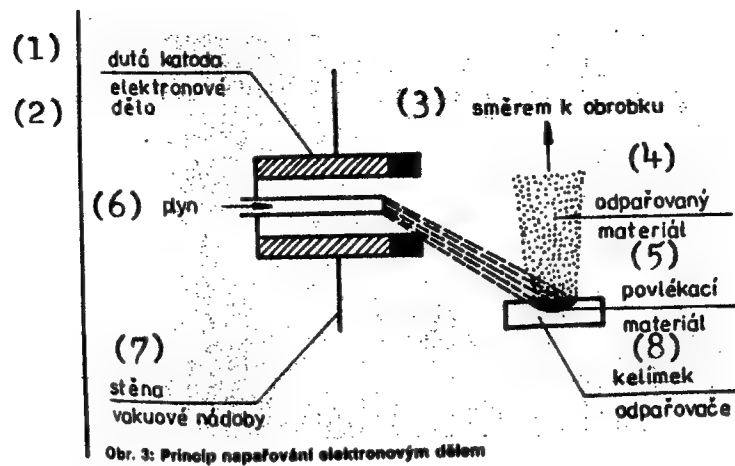


Obr. 2: Rozdělení technologií a metod pro vytváření povlaků

Fig. 2: Distribution of technologies and method in the creation of coatings

Key: 1. Kilograms per capita
2. Share in percentage
3. Year

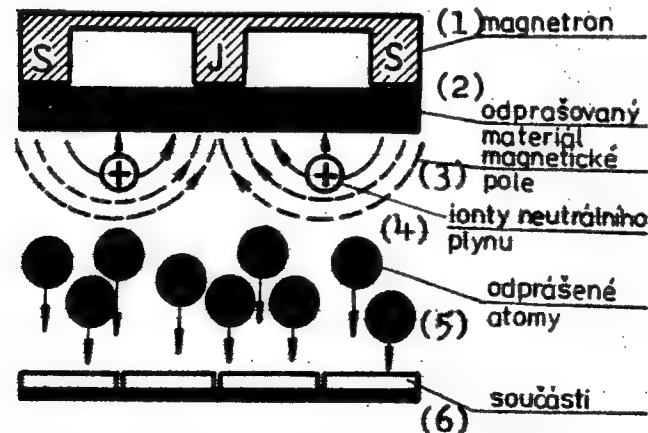
Key to graph: 1. Cementing
2. Nitrocementing
3. Oxycarbonitridation
4. Regular nitridation in gas
5. Procedures in plasma
6. Vacuum processing
7. TiC, TiN, CrSi coating
8. Corrosion-resistant coating



Obr. 3: Princip napařování elektronovým dělem

Fig. 3: Principle of vacuum deposition with an electron gun

- Key:
1. Hollow Cathode
 2. Electron gun
 3. In the direction of the product
 4. Evaporated material
 5. Coating material
 6. Gas
 7. Wall of the vacuum container
 8. Evaporation crucible

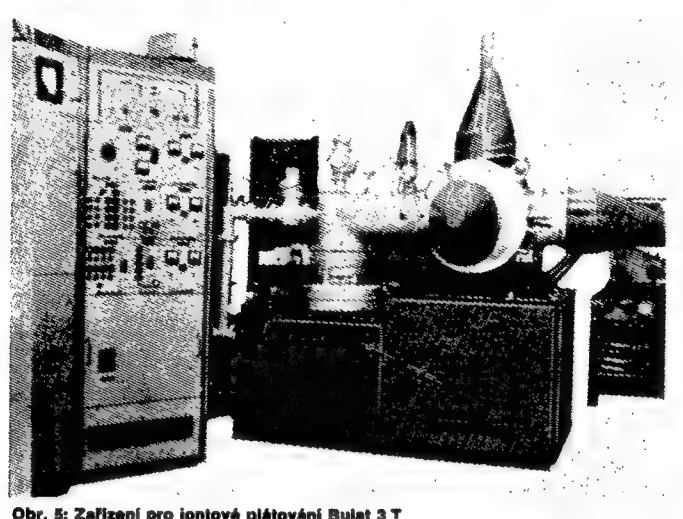


Obr. 4: Princip napařování pomocí planárního magnetronu

Fig. 4: Principle of powder deposition using a planar magnetron

- Key:
1. Magnetron
 2. Material being removed
 3. Magnetic field
 4. Neutral gas ions
 5. Atoms removed as powder
 6. Component

The ion-cladding method is partially based on the already described methods of vacuum and powder deposition which are further supplemented by ionization in the discharge and preliminary loading carried to the component being coated. By this method, it is possible to form coatings of various compounds and the coating has high adhesion because of the 10^2 eV energy with which the ions strike the component. A substantial advantage of ion cladding over the other PVD methods is the uniformity of the coating and the coating of the reverse surfaces of the component as well. The speed of creating a coating with ion cladding lies between the speeds of vacuum and powder deposition. The evaporation or scattering of the coating material is most often accomplished by using a magnetron and electron gun, or the so-called cold cathode.



Obr. 5: Zařízení pro iontové plátování Bulat 3 T

Fig. 5: The Bulat 2 T equipment for ion cladding

To date, the only equipment employed in Czechoslovakia in production working on the principle of ion cladding is equipment based on the cold cathode, the Bulat 3T. It is imported from the Soviet Union and installed in n.p. (national enterprise) Naradi Zdanice, where it applies hard, wear-resistant coatings to cutting tools (thread cutters, drill bits, cutting files, etc.) and other machinery components. The process takes place at temperatures of 200°C and above and applies coatings of various metals based on nitrides and carbides. A tool coated in this manner, for example, with titanium nitride, becomes two to five times more durable than the original. The thickness of the layer ranges from 3 to 5 μm . The hardness of the TiN coating averages around 2,500 HV units and the coating has a low coefficient of friction and a lower heat conductivity. The cutting speed of the tools can be increased by 25 to 50 percent as compared with the uncoated.

The Soviet cold cathode method is protected by patent in the FRG, France, England, Italy, Japan and the United States. In 1980 the American company

Multi-Arc Vacuum Systems bought the license for the technology and also for the production of coating equipment from the USSR.

New equipment designated IIV - 6.6 NI, which has substantially more useful features than the Bulat equipment, even though it works on the same principle, was developed in the Soviet Union in 1985. In addition to the Soviet Union, other CEMA countries are working on the development of equipment employing the PVD principle. In the GDR the firm Hochvakuum Dresden offers the Tina 900 equipment for ion cladding, which works on the electron gun principle. The annual capacity of this equipment is, for example, one million drill bits of 5 mm diameter.

Other equipment for the technology of powder deposition on the magnetron principle was developed in Poland and bears the designation NK 602. The equipment is produced and supplied by the Tepro company in Koszalin which also displayed it in 1985 at the exhibition in Brno. Work is also being done on development in Bulgaria and the CSSR. In Czechoslovakia the CSAV [Czechoslovak Academy of Sciences], a number of schools of higher education, the Research Institute for Engineering Technology (VUSTE) Prague, kraj enterprise Electric Heating Equipment Plants (ZEZ) Prague, and its research and development center in Liberec are participating in development.

6285/12948
CSO: 2400/369

UNDERWATER TANK CROSSING TACTICS

East Berlin AR-ARMEERUNDSCHAU in German No 7 1986 [signed to press 21 May 86]
pp 60-64

[Article by Lt Col Horst Spickereit: "UF--Military Abbreviation for 'Unterwasserfahrt' (Underwater Crossing): Tank Crews Practice This Means of Overcoming Water Obstacles with Their Combat Vehicle Once a Year"]

[Text] Private Hartmut Huschke looks at the duty roster at the camp, far from the barracks, with some amazement. The UF is scheduled for--of all days--his 25th birthday! It will be the first water crossing for the tall gunner from Company 1. "Who else can claim to have experienced such a thing on his birthday," he grins. "Driving a tank through the river!"

They had already been talking about this training in the barracks. Now, in the field encampment, they are practicing everything, from the lengthy preparations to driving under a variety of conditions. Huschke is curious about this unusual procedure. How will it work? Will it be exciting? He does not have any worry about being unable to handle it, nor has he any fear of the unaccustomed, the water element. He had worried only before the cursory diving training in the barracks, when he, together with the rest of his crew, entered a flood training chamber to practice getting out of a tank disabled underwater, a training which is necessary for anyone prior to going into UF. But even then Huschke found that there was no reason for fear whatsoever, that the simulated emergency evacuation came off perfectly, that his crew worked together in an excellent manner. And he found out also about the reliability of the rescue unit, that small plastic box which is strapped to his chest, helps him to breathe and is worn in all underwater travel.

The private is optimistic and ambitious. "I want to prove myself, I want to be able to do it. UF is a combat task like any other. And as a crew, we have been through all kinds of things already. For days on end we sat in the cramped tank during regimental exercises, we did well in the firing and driving exercises. We know what we can expect from one another. So why shouldn't it work this time? We intend to do our best here too." He has confidence in his crew--an important criterion for determining whether an individual is equal to the psychological stress of UF. "I would dare anything together with my comrades. We get along great." The gunner is particularly impressed with his commander: "He knows what it's all about; he knows how to be a leader. He radiates calm and tranquility."

Noncommissioned Officer Ralf Kloetzer, the commander, considers this attitude to be important during the time they are quartered together at their battle station, which may last many hours, even several days. The four FDJ members act accordingly; they have created an atmosphere which is most suitable for combat. "Sure, we foul up every once in a while too. But in that case we do not yell at each other or sulk around for days. I know some crews who practically make the sides of their tanks buckle when they scream at each other."

However, Ralf Kloetzer thinks, part of the harmonious relationship in a combat unit derives from solid knowledge and confidence in their equipment. Everyone knows what to do and when to do it. This makes for an ability to approach things with greater self-confidence. And because of this, the noncommissioned officer never tires of endlessly practicing with each crew member the tasks prior to and during the underwater crossing inside and outside the tank. What must be ascertained while sealing the chamber for low pressure? How do we attach the exhaust flaps, the air supply tube? At what stage do we set the gyro compass? Who turns on the bilge pump? What do we do in case of a breakdown? Their own combat vehicle was left behind; at the encampment they had to use another T-55 and put it in proper condition. No use complaining about a missing key here, a bent cover flap there. Those conditions too must be dealt with.

On the morning of the water crossing the company is given a demonstration of how to recover a tank from the river. The soldiers watch the simulation of an engine breakdown in the middle of the river. Immediately a tank tractor--one of which is always in readiness at each riverbank--and a rescue and security boat approach and quickly attach the cables for towing. The disabled tank is back on dry land within 4 minutes and the crew dismounts, dry and in the best of health. Everyone can see that in case of an incident, people and equipment are ready to intercede immediately.

Great emphasis is placed on safety. The crews are aware of this also during the preparation for the river crossing in the assembly area. They must pass two inspection points. The men stationed there enter the vehicles, look at every detail, push and pull here and there. It could be that during the travel something had come loose, that the crew failed to notice something or other. Is the air supply tube firmly attached? Are the hatches tightly sealed? Here a threadbare rope is noted, is exchanged for a new one; in another tank, the loop at the end of the cable is twisted in the towing hook; it is straightened out. These are necessary adjustments if a possible rescue is not to be made difficult or even delayed.

Noncommissioned Officer Kloetzer and his vehicle reach the river without any defects being found. On the other bank he sees the yellow orientation flag, the market toward which he must head, and gives the order to aim the tank accordingly. He gives the command to the driver: "15,000 rpm." Noncommissioned Officer Volker Osbahr moves the hand accelerator lever, looks at the rpm gauge until he has set the desired number. He then loosens the locking device of the heading indicator and sets it on zero. A change in this number during the water crossing would warn the driver of a deviation from the course. Now he gets the command to cross. It is the first time he is crossing a river.

Until now, he has only crossed a still body of water once. Will he be able to handle the current? Osbahr starts the engine, goes into first gear, drives the steel vehicle to the river bank at a constant speed, goes below waterlevel. The color outside his periscope turns green, then gray, finally black. The rattle of the exhaust gases, which have to squeeze past the flutter valves, the water protection flaps, can no longer be heard. The engine compartment noise remains constant. Osbahr feels the coolness of the river; every now and then a drop of water falls. Now it becomes brighter outside; a few more meters, and he sees the overgrown riverbank; with his left hand pulls back on the blind opening lever. This causes the underwater crossing flaps in the rear, above the engine room, to flip open, permits the engine to breathe fresh air in a direct manner.

"Excellent," says the commander of the crossing position and enters the following in the record: approached and entered the water smoothly, in a straight line, did not roll backwards, did not change gears, executed commands correctly, on the far bank folded the air supply tube at the right moment and replaced gun at battle angle, thus made the tank combat-ready. However, the safety officer gives one demerit: he thinks that the UF flaps had been opened too early, when the vehicle was still partly in the water; they must not be opened until the vehicle is entirely on dry land. Noncommissioned Officer Osbahr had thought that he was already on land--well, next time he will wait a little longer.

But not every crossing resembles the previous one. The crew finds this out during its next turn. They had once again, as had some others, been forced to use a strange vehicle. This time too they prepared well for the mission, entered the water in exemplary fashion. Halfway across the river, they receive a radio signal from the crossing commander to steer left. Noncommissioned Officer Kloetzer wants to pass the order on to the driver. But no matter how often he talks into the intercom, Osbahr up front does not react. Breakdown of the communication system! Could water have gotten in? Kloetzer yells at Huschke to give the driver a signal. The latter feels that he is being hit in the back, but does not know what to make of this--his steering compass is set firmly on zero. Kloetzer becomes upset. I hope this turns out all right, he thinks.

Things work out all right. On the bank they find that the deviation is a mere 4 meters from the marker flag, and is still barely within the prescribed trail. Worried for nothing. It was the current that pushed the vehicle off course. But that stupid air supply tube! Why won't it fold over? Kloetzer is unable to loosen the screw. The tank bounces up and down on the uneven river bottom, with the tube getting jammed even tighter. Only when they reach flat terrain he succeeds in doing the job, 15 meters after having left the water. "Man, I can't handle this bank!" he growls.

But Ralf Kloetzer learns to handle this too. During the next underwater crossing the crew has a better understanding of how to deal with the particular riverbank profile concerned, how to act with greater combat realism--no more mistakes. Whether they did it in individual tasks or at the end during a

column exercise: Kloetzer's men have contributed to Company 1's passing with flying colors.

Is that how Hartmut Huschke had imagined his birthday rides to turn out? "It was fun, even though the second ride took a lot out of us. But the intensive preparations turned out to have been completely worthwhile. A nice memory, this underwater crossing."

9273/7358

CSO: 2300/487

FOREIGN LINGUISTS SPECIALIZING IN ROMANIAN ATTEND COLLOQUIUM

[Editorial Report] Bucharest CONTEMPORANUL in Romanian No 31, 1 Aug 86 publishes on pp 8-9 a report by Florin Antonescu entitled "Romania vazuta de traducatorii literaturii noastre in limbi straine" ["Romania perceived by translators of our literature into foreign languages"]. The report is a collection of comments by 12 participants at a recent scientific colloquium on the language, literature, history and art of the Romanian people--the 27th in a series--held under the aegis of the University of Bucharest. Some 45 universities from three continents, according to Antonescu, sent representatives to the colloquium, including the USSR, Italy, Hungary, Great Britain, Japan, the People's Republic of China, West Germany, Poland and France.

Stepan Boxbei, a Soviet professor said this: "The unique character possessed in recent years by problems of literature, language and history in the development of Romanian society has given us a chance to exchange opinions openly and sometimes polemically. Personally, I have discovered many interesting things. I now realize that Romanian cultural life is varied and abundant. ...I would like to take this opportunity to underscore the fact that Romania actively participates in the discussion and solution of major problems of the contemporary world. I have noted with satisfaction how closely our two countries agree on solving the problems worry mankind and defending the cause of socialism. I also noted with satisfaction that relations of friendship and collaboration between our two countries are in a state of constant development. We have many exchanges at all levels. Our reciprocal interests in a multitude of fields can only contribute to a greater closeness between our countries."

Li Jiayu, a PRC radio editor, had this to say: "It will be thirty years in September since the creation of the department of Romanian language at the Foreign Language Institute of Beijing. I am glad to be one of the first graduates of this institute. ...Our two peoples have a similar historical past animated by ideals of liberty, unity and peace. Today, the noble ideas of building socialism characterize our two nations alike. The Chinese people are well aware of and very much admire your accomplishments and their breadth, especially after 1965, a period you are truly justified in calling the Nicolae Ceausescu Era. Today Romania pursues an independent policy of peace and cooperation in the world, and it is a significant fact that a relatively small country has managed to achieve international prestige in such a convincing fashion. Initiatives and projects conceived by Romania confer upon it a very active role in furthering the cause of peace, cooperation and understanding--aspirations so dear to all peoples. That is why today Romania has friends all over the world."

Sandor Czirle, a Hungarian student, states: "My elementary school and, later high school studies were carried out in Romanian; now I am studying history as well as Romanian language and literature at the University of Budapest. Research on the Romanian language constitutes an extremely vast field. That is why my interests cover a multitude of aspects: the history of the language contemporary Romanian grammar. In general, as a historian, I find it necessary to have knowledge of the evolutionary stages of the language over time. ...I audited an excellent course on the work and thought of the great scholar Dimitrie Cantemir, a course that made me realize how valued intellectual tradition is in Romania."

Other participants commented on works by Romanian poets and writers, both contemporary and classical (Eminescu, Sadoveanu, Stanesco, Caragiale), Romanian painters and composers (Grigorescu, Enescu), Romanian folk music and folk culture and related topics.

/13045

CSO: 2700/273

BOOK BANNED IN BUCHAREST NOT FOR POLITICAL REASONS, SAYS WRITER

[Editorial Report] Bucharest LUCEAFARUL in Romanian No 30, 26 Jul 86, p 7, has an article 1,000 words long by Corneliu Vadim Tudor entitled "The Time of Culture." The article is a reaction to a novel by one Petru Bellu published allegedly on this side of the Atlantic under the title "Apararea are cuvintul" ["The Defense Speaks"] bearing the warning "Novel Banned in Romania" on its dust-jacket. Tudor discusses why this book was banned, asserting that it was not because Bellu is another Dostoievsky or Pasternak, a Balzac of the Danube." After a dig at Western readers "used to horror films and eager for the sensational and the scandalous," Tudor states it was rather "good taste, aesthetic values, the tradition of a culture rejecting anything that is kitsch" that caused the book to be banned. "The regime did not ban the book for political reasons." Petru Bellu is "condemned to anonymity" in Romania owing to his own "infantile" work, which is utterly inferior to "the true masterpieces of Romanian civilization," Tudor asserts. Tudor says there will always be those who will try to find fault with the "new Romanian culture," the "culture of the workers' state," but, "we don't write for them, but for honest people who are aware that the strong wind of independence swells up the sails of the spirit, owing no explanations to outsiders."

/9274

CSO: 2700/262

READER 'OUTRAGED' AT NEW U.S. ENVOY'S REMARKS

AU111327 Bratislava PRAVDA in Slovak 9 Aug 86 p 4

[Letter by Miroslav Prekop, Surany, in the "Reader's View" column: "Expression of Blatant Interference"]

[Text] In reading PRAVDA on Saturday, 2 August, I was greatly astonished by Jan Tihlarik's commentary entitled "Unusual, Unheard Of," in which the author reports on a statement by the new ambassador of the United States to our republic, as quoted by the REUTER News Agency. According to this agency, the ambassador said that he would meet dissidents, that he would strive to maintain contact with them, and that he would seek to upset Czechoslovak-Soviet relations. He reportedly called on the members of Congress to follow his example when visiting Prague and promised to give them his support.

This report makes one's mind boggle. Is it at all possible that a newly appointed ambassador, whose major role should be to strive for the best possible contact of the country he represents with the country in which he operates, is it at all possible that the representative of a country which, according to the words of its President, allegedly has a most democratic system and supposedly strives not to interfere in the internal affairs of sovereign states, is it possible that a man who represents a supposedly advanced and democratic state really uttered these words?

Such and similar steps of the United States are the harsh reality, although it seems to me that in this case Julian Niemczyk, the new U.S. ambassador, 'laid it on rather thick.' It is as if a man about to visit his remote relatives were telling everywhere how he would break up their family. I have no doubts that such a person would not be received with open arms, but it may well be that this is precisely the intention of Mr Niemczyk and those behind him. This is blatant and uncouth underestimation. In this case the U.S. diplomat no longer feigns anything, as is their habit, but betrays his intentions unscrupulously and in an absolutely undiplomatic fashion. This could be called candid treachery.... I can visualize the "alarm" in capitalist countries touched off by an ordinary slip of the tongue or poorly understood contents of the words of a diplomat from a socialist country--he would certainly be declared persona non grata and expelled from the country of his service. And I can visualize what tremendous political capital Western politicians would make out of it. I believe that the pronouncements of Mr Niemczyk, made shortly after the signing of the Czechoslovak-U.S. agreement on cooperation in culture, education, science, and other spheres, show with sufficient clarity what U.S. ruling circles really think about this agreement and what significance they ascribe to it....

BRIEFS

CSSR-USSR SOCIETY TO RENEW CARDS--Prague (CTK)--The Czechoslovak-Soviet Friendship Society [SCSSP] at present associates almost 2.5 million members, the overwhelming majority of whom are actively participating in the organization's actions. A session of the SCSSP Central Committee has noted that in some branches and organizations of the society there still survive shortcomings such as formalism, superficiality, and similar things. Therefore, one of the important instruments for the development of the initiative and the activity of members will also be the planned exchange of membership cards, which will be carried out next year. The new membership cards will have some changes in their format. Their validity will be extended from the current 10 to 12 years. The introductory page will be complemented by a Klement Gottwald quote about the mission of the SCSSP, the space for noting changes of branch will be expanded, and there will also be further minor changes. [Text] [Bratislava PRAVDA in Slovak 30 Jul 86 p 2] /8309

CSO: 2400/393

BEGINNING STUDENTS SOCIAL, CLASS BREAKDOWN

Warsaw ITD in Polish No 31, 3 Aug 86 p 2

[Article by Andrzej Nierychlo]

[Text] The lists of those accepted to the first year of studies have already been posted in universities and colleges. Another 50,000 nineteen-year-olds will begin studies in October. They have their share of small experience, convictions and outlooks. Will they contribute to a change in the currently unfavorable opinion of students? We wish this for them. Ten years ago, 70,000 young people were accepted to institutions of higher learning. However, because the age group was considerably larger at that time, the so-called higher studies accessibility chances index; i.e., the percentage of those entering institutions of higher learning on the basis of the entire age-group, has for all practical purposes not undergone any changes during those years and comes to approximately 10 percent (thus, for every 10 of the same age-group, 1 gained access to an institution of higher learning). I do not feel that this index will grow in the near future, since this would be associated with considerable expenses and there exists a hierarchy of more pressing needs. However, it is reassuring to note that in such a delicate, social sphere as accessibility to higher learning, we have not noted regression. However, the social structure of university and college students is another matter. In a two-part study published by ZSP [Polish Student Association] entitled "Social Problems of the Academic Community" ["Spoleczne problemy srodowiska akademickiego"], which was an outshoot of an academic session on this subject, I found an interesting study by Dr Jan Lewandowski (nota bene several weeks ago, we printed an extensive interview with him). He calculated the percentage of first year students for several age-groups as compared with the total number of 8th grade students of the same age-group. It turns out that this index has not changed for years for working class youth [mlodziez robotnicza] and amounts to 7.6 to 7.8 percent. On the other hand, the index of accessibility to institutions of higher learning for peasant youth has decreased considerably from 4.1 percent in the 1955 age-group to 3.1 percent in the 1962 age-group (in absolute numbers, this indicates a 50 percent drop since the later age-groups number less). Accessibility to higher studies has increased appropriately for youth from intellectual spheres where for every 100 representatives of the 1962 age-group, 37 have been admitted to universities or colleges. Medical and art academies have the most students from intelligentsia circles. On the other hand, the least number of students from the intelligentsia class is to be found in teacher training colleges and

at the Catholic University in Lublin [Katolicki Uniwersytet Lubelski].
Intelligentsia youth dominates those fields of studies where the entrance examination is difficult and takes into account not only knowledge but also skills and talent. The condition for overcoming the barrier of such an exam is long-term education outside of the school environment and this is practiced nearly exclusively in intelligentsia circles. Another factor which influences the selection of the area of studies by representatives of various social groups is the trend of inheriting professions, particularly in the so-called professional groups [grupy wolne]. All of this may indicate that the social structure of university and college students will not change radically for a number of years yet.

9853/12913

CSO: 2600/619

BRIEFS

BYDGOSZCZ DEFENSE COMMITTEE--(Staff Report)--The Bydgoszcz Voivodship Defense Committee has held a meeting attended by Gen. of Arms Antoni Jasinski, deputy minister for general affairs and vice minister of national defense. The meeting was chaired by Bydgoszcz Voivodship governor, Dr. Engr. Stanislaw Kubczak. Problems related to defense training and the military and patriotic education of young people were discussed during the meeting. An assessment was made in this regard of the forms and methods of work being employed by schools, paramilitary and youth organizations, and workplaces. In the course of references to the well administered campaign for the recruitment of candidates for the professional military school system emphasis was placed on the need to continue employing diversified working methods, especially in the schools. The demand was made that more attention should be paid to problems of patriotic and defense training in workplaces. [Text] [Warsaw ZOLNIERZ WOLNOSCI in Polish 6 Aug 86 pp 1, 5] /9738

MESSNER SEES CONSUMER ADVOCATE--On 18 July the Chairman of the Council of Ministers, Zbigniew Messner, met with the leadership of the Consumers Federation headed by the Federation president, Malgorzata Niepokulczycka. Problems associated with the work being done by the Federation were discussed. Special attention was focused on efforts being made to improve the quality of consumer goods. Vice Premier Jozef Koziol also took part in the talks. [Text] [Warsaw TRYBUNA LUDU in Polish 19-22 Jul 86 p 2] /9738

PROSECUTORS BRIEFED ON AMNESTY--On 18 July a conference was held at the Office of the Prosecutor General attended by voivodship prosecutors, and the prosecutors of the military districts and branches of the armed forces to discuss. The conference was called to discuss the implementation of the Law on Special Proceeding in the Cases of Certain Persons Convicted of Legal Offenses. The Prosecutor General, Jozef Zyta, discussed the law passed on 17 July concerning special procedures to be followed in disposing the cases of certain persons convicted of legal offenses and the tasks facing the Prosecutor's Office of the PPR in connection with the implementation of this law. He outlined some of the administrative arrangements made to insure the effective implementation of the rulings and decisions that have been made and help see to it that the public is made well aware of and kept informed about the implementation of the rulings of this law. [Text] [Warsaw TRYBUNA LUDU in Polish 19-22 Jul 86 p 2] /9738

SOVIET ECONOMIC TIES--On 10 July Marian Wozniak, Politburo member and PZPR CC Secretary, met with the chairman of the USSR Government Task Force for the Promotion of Economic Ties Between Poland and the USSR, Vladimir Lakhtin. The implementation of decisions made PZPR CC First Secretary Wojciech Jaruzelski and CPSU CC General Secretary Mikhail Gorbachev was discussed. These decisions, it was pointed out, are contributing to the substantial augmentation and deepening of Polish-Soviet cooperation owing in particular to the more widespread establishment of direct links between business organizations in both countries, the formation of joint enterprises, and closer collaboration in the arena of scientific and technological progress. It was noted that possibilities exist for greatly increasing trade by expanding border district cooperation and direct contacts between commercial entities. The meeting was also attended by Franciszek Kubiczek, chairman of the Polish Government Task Force and first deputy chairman of the Planning Commission of the Council of Ministers. [Text] [Warsaw TRYBUNA LUDU in Polish 11 Jul 86 p 2] /9738

SOVIET ENGINEERING TIES--During the course of the latest in a series of meetings of the Polish and USSR government tasks forces for economic ties between the two countries held on 10 July Janusz Maciejewicz, minister of metallurgy and the machine building industry, held talks with membets of the Soviet delegation. The Soviet side was represented in these talks by the following vice ministers: A.V. Bolbot (Aircraft Industry), V.V. Meleshchenko, Agricultural Machinery and Tractor Industry, and P.D. Grigorev, Chemical Machinery Industry. Those taking part in the talks examined, among other things, the current state and the prospects for the further expansion of direct cooperation between leading enterprises of the electrical engineering industries of both countries. [Text] [Warsaw TRYBUNA LUDU in Polish 11 Jul 86 p 2] /9738

CSO: 2600/597

POPULAR CULTURAL ACTIVITY PLENTIFUL, SAYS WRITER

Bucharest ROMANIA LITERARA in Romanian No 31, 31 Jul 86 p 3

[Article by Valentin Silvestru entitled: "Cultural Space"]

[Excerpts] It is worth noting how much is being done in our country today in order to increase the popular nature of art and its assimilation, and how plentiful the forms of cultural activity have become. Literary circles of poetry, sculpture gatherings, film club meetings, theater galas, satire and humor competitions, are among the new methods successfully initiated and tested on Romanian soil, in the way the national festival, "Cintarea Romaniei" ["Hymn to Romania"], with its enormous scope and diversity of works and emulative techniques established itself as an original, unique experience. This set of concerns leads--among other things--to the separation of good taste from bad taste, of art from its substitutes, of the concept "popular" from the concept "populism"; it plants the seeds of the necessary practice of formulating points of view and expands the Romanian cultural space considerably in order to encompass all areas where creativity germinates and uplifting and ennobling through beauty are possible.

Less research has been done--though it is beginning to be noticed more and more clearly--on profoundly and efficiently artistic and literary criticism have integrated themselves into this activity, and on the other hand, how trenchant becomes the distinction between genuine, true criticism--militating with fervor and respect for the truth of art--and criticism that deceives through suspect complaisance, inconclusiveness, topical ambiguity, lack of concern, emphasis on circumstances, the tendency to sweep things under the rug and to indirectly encourage a prettified mediocrity. The social and artistic responsibilities of critics are, essentially, no different from those of arts and letters in general; except that criticism, as a result of up-to-date journalism and of theoretical and reference books, is able to contribute more quickly to the jelling of currents of opinion favorable to intellectual progress. And for it as well as for artists and literati, filling the national cultural space with modern images and ideas focused on the incandescent point of certain perennial patriotic aspirations, excellently expressed by the scholar Al. Davila: "The interest of our nation is intellectual progress, culture, civilization; the yearning for something better, something higher, something more beautiful; the development of the arts, of taste, of wisdom; the search for perfection, the love of the sublime...".

SOCIAL, ECONOMIC EFFECTS OF TECHNOLOGY DISCUSSED

Bucharest CONTEMPORANUL in Romanian No 30, 25 Jul 86 pp 9-10

[Article by Dr Gh. Lencan Stoica: "Electronic Innovations and Their Impact on Social and Political Life"]

[Excerpts] It has become commonplace to remark that the new electronic innovations have had a profound effect on the system of industrial production and on the economy in general. This is a transformation that has brought about radical as well as substantial changes in society as a whole.

Numerous social and political difficulties (not to mention scientific ones) narrow the possibility of controlling technology, however. One of these is the fact that the means available in the world of technology exceed our capacity to understand and regulate the effects of advanced technology use. The stage reached by research in physics, biology and natural science in general is certainly very high, extensive and deep. But our capacity to analyze their social implications is much more limited and sometimes outright deficient. Today, by the time the ill-fated effects of a certain aspect of technology are discovered, they already will have been part of the fabric of economic and political life for a long time. As a result, every attempt at correcting the situation runs into almost insurmountable obstacles or requires a long period of time to be successful.

What is the situation, then, in the "world of electronics"? The rapid development of microelectronics requires, we believe, in-depth studies concerning the consequences and structural implications brought about by the new technology. We are not talking about science fiction here, but of scenarios which futurologists foresee as viable around the year 2000, of "objective" tendencies. All of these scenarios have a common nucleus: reductions in the number of work places in both production and services brought about through extending automation into factories and offices; the polarization of work requiring highly specialized training (for the few) and work requiring no such training (for the many) caused by the disappearance of manual labor and of work requiring intellectual skills at the intermediate level; the need to rapidly accelerate professional retraining.

It may be said, therefore, that the "technological revolution" might bring about comprehensive changes not only in the economic-production panorama, but also in the power relationships among social subjects. As a result, the spectacular transformations in the area of production of a more complex society such as contemporary society might probably conceal the feeling, not yet well conceptualized, that at the same time more spectacular changes in the cultural, social and political field may be brought about owing to such an impact.

That is why researchers especially in the field of social sciences (sociologists, philosophers, political scientists, psychologists, etc.) who base their analyses on the spirit of dialectical and historical materialism, try to and indeed must diversify their concerns to a larger extent in the direction of contemporary phenomena, of possible and actual relationships between society and electronics. Complex and concrete investigations are still necessary, which might be undertaken with greater resolve in our country as well in accordance with principles concerning the development of this important element of the Romanian economy formulated in party documents and in the works of Comrade Nicolae Ceausescu. Profound changes in the work process will result also in the context of socialist conditions, but these will be put to better use for the development and fulfillment of human personality. A new class will not be born, as apologists for capitalism maintain, rather, the working class will transform itself fulfilling its historical mission of creating a better society.

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PHILOSOPHY BOOKS NEED MORE ATTENTION, SAYS PROFESSOR

Bucharest CONTEMPORANUL in Romanian No 30, 25 Jul 86 p 9

[Interview with Univ. Prof Dr Ludwig Grunberg by Elena Solunca: "What Philosophy Seeks and Promises"]

[Excerpts] [Question] What is the role of philosophy in the context of scientific revolution?

[Answer] In our times, philosophy is not situated at the outskirts of culture, even if it abandons the illusion that it can certify first principles or crown the other cultural forms. It sits side by side with science and art, with equal rights. It is only now that philosophical discourse allows a culture to know itself, to obtain an awareness of its problems and an axiological guide. It thus becomes "primus inter pares," first among equals.

[Question] We currently have criticism of literature, music, art... What do you think would be the purpose of having criticism of philosophy books?

[Answer] Though we do have in-depth literary criticism, with beneficial effects on creativity, philosophical criticism worthy of the name seems to be lacking. With the exception of REVISTA DE FILOSOFIE and of certain occasional reviews in ERA SOCIALISTA and ROMANIA LITERARA--and of course CONTEMPORANUL--our publications ignore philosophy books, or, when they are not ignoring them entertain unbelievable confusions between authentic and false values, making demands which philosophy is not competent to satisfy and looking for philosophic thought in places where it does not exist. In the unfavorable milieu of one-sided and conformist applause of those articles pretending to practice "philosophical criticism" it is difficult to answer the question: "Where are our philosophers?". Nevertheless, they are here among us. Let me present some of them to you: Vasile Tonoiu, Gheorghe Vladutescu, Ilie Parvu. They--like others who deserve mention--are the most representative exponents of a generation which, around the age of 45, appears to have reached the peak of creativity bringing a breath of fresh air into our philosophy movement. I bring up their books, such as "Dialectica si relativism" [Dialectics and Relativism], "Infinitul si infinitatea lumii" [Infinity and the Infinity of the World], "Modernitatea ontologiei aristotelice" [The Modernity of Aristotelian Ontology], mentioned only in passing by philosophical criticism, because these books--and not only they--register contemporary Romanian Marxist philosophy in the worldwide circle of values through original contributions to the reconstruction of ontology, the renovation of dialectics and the amplification of self-awareness of the act of philosophical creativity.

NEED FOR SATIRE IN SOCIALISM DISCUSSED

[Editorial Report] Bucharest CONTEMPORANUL in Romanian No 32, 8 August 1986 publishes on page 13 a 700-word article by Adrian Paunescu entitled "Nevoia de satira" ["The Need for Satire"]. Having seen recently two satirical plays, "The Furious Lamb" by the Romanian playwright Aurel Baranga [written in 1953] and "A Day of Rest" by the Soviet playwright Valentin Kataev [written in 1947], both of which elicited gales of laughter from their audiences according to Paunescu, he is moved to ask that "satire be written today as well."

"People like to laugh," says Paunescu, "they like to be cleansed through laughter. If one thinks of social life as an automobile, satire could well be an important part of the radiator of this automobile, making sure the engine temperature is right and blocking demagoguery." "Of course," he continues, "satire is unsettling. Many would like to pretend they are perfect. But the world can see they are not." Then Paunescu quotes a remark by Karl Marx on the subject to the effect that "confession is good for the soul." "Yes indeed, Your Revolutionary Excellency," Paunescu continues, "after seeing the two comedies by Baranga and Kataev, aimed at the defects that still persist in socialism or that appeared as an outgrowth of its development, I did not feel pushed away from socialism but, rather, felt a solidarity with what I had seen, even though it hurt to laugh about it. I felt like lowering the curtain and putting the house in order. Then we could raise the curtain after we had cleaned up and take a picture."

"Let us develop satire. We must not believe naively," says Paunescu, "that as socialist society gets older, vices, evils, errors, stupid customs will all correct themselves. I realize they won't be set right merely through satire. But satire is a sign of strength, and its therapy has miraculous healing powers, since it points out weaknesses."

In the final paragraph, Paunescu states that "true satire, not merely a subservient one, must make us laugh heartily with the laughter of truth and must make us fully aware of our duties as human beings."

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DIRE CONSEQUENCES OF ALCOHOLISM WORRY AUTHORITIES

Sofia RABOTNICHESKO DELO in Bulgarian 31 Jul 86 p 2

[Article by Vasil Popov, public prosecutor in Office of Chief Public Prosecutor of Bulgarian People's Republic: "Health Without Toasts--Leniency Is Harmful"]

[Text] The persistent series of demands for intensifying the campaign against alcoholism is occasioned by the harm that this social ill inflicts on the individual, the family, the state and society.

Obvious progress has been made against this vice so far as a result of the efforts and heightened concern of state officials and public organizations, of the temperance movement, of the whole of public opinion. The results, however, do not remotely measure up to the possibilities of restricting this ill. The use and abuse of alcohol is still alarming. Many crimes--murders, robberies, bodily injuries, rowdiness, rapes, thefts--continue to be perpetrated under the influence of alcohol. About 30 percent of all crime in the country is associated with the use of alcohol.

The consequences of DUI [driving-under-the-influence] automobile accidents that take the lives of hundreds of people are tragic, while the socioeconomic consequences adversely affecting production and the injuries to families and children and to the health of the alcohol abusers themselves are simply immeasurable.

Public order suffers too. Drunks recklessly disturb the peace and rest of citizens at night. Returning home in the middle of the night, by their cries, shouts, songs and obscenities, they rob working people of their sleep and tranquility and disrupt the peace of their families.

Public organizations, comrades' courts, volunteer detachments of workers, the militia and the public prosecutor's office must no longer show leniency towards these alcohol abusers and systematic disturbers of public order and domestic tranquility with whom they have repeatedly dealt. Everybody must answer to the law strictly and uncompromisingly--according to their acts.

The party requires defenders of the law and control officials to eliminate the deficiencies in their job of combating drunkenness; to check decisively violations of the regulations governing the liquor trade; to assist workforces,

families and citizens, the public, to rehabilitate alcoholics; to ensure strict and undeviating implementation of antialcohol legislation. Any evasion in the event of calls and complaints or personal observations of incidents in public places, caused by drunken behavior, is a violation of official duties, for which responsibility must be borne.

Our party and state documents in the campaign against drunkenness and alcoholism will have to be updated and augmented in the spirit of present-day demands and, no less importantly, the campaign against alcohol and alcohol abuse must be raised to a higher level and must become a cause of our entire public opinion. A package of comprehensively well-founded organizational, administrative-law and educational measures must be developed and carried out in order to reinforce decisively the antialcohol campaign and upgrade its effectiveness.

Measures are needed to create in every workforce an atmosphere of intolerance towards drunkenness and violations of labor discipline and to prohibit the use of alcoholic beverages in enterprises, institutions and organizations and the misuse of state and public moneys to arrange various festivities and banquets with spirituous liquors. It is imperative also to take measures for universal observance of prohibitions on liquor sales, for the first-rate improvement of antialcohol propaganda and for inculcation of sobriety in the spirit of the people.

Defenders of the law, jointly with state, Fatherland Front, Komsomol, trade-union and other public organizations are called upon to carry out most persistently the preventive measures against drunkenness and to eliminate the causes and conditions that give rise to it. MVR [Ministry of Internal Affairs] officials would make a new contribution in providing more active cooperation with volunteer detachments of workers, with the comradesly courts, with councils for prevention in the workplace, with people's councils and Fatherland Front committees. This would enhance the organized character of the preventive work in every microrayon.

It is advisable to introduce normative administrative penalties--warnings, fines, administrative arrest (detention in MVR units for up to 15 days) for drinking liquor in the streets, parks and gardens, in the entrances of housing tracts, department stores, open-air kindergartens, stadiums, on public transportation and in other public places.

But the antidrunkenness campaign cannot be waged by administrative and penal measures alone. It is a nationwide task. All officials and organizations that conduct ideological and educational work must take part in it.

The task of a decisive campaign for sobriety makes demands also for improvement of the socioeconomic roots of liquor consumers. The issue is not termination of the production of alcohol (this would be illusory), but a sharp restriction of the supply in the domestic market. This, however, necessitates making changes in the structure of agricultural production and the output of the food, wine and tobacco industries with a view to an increase in the production and sale of dessert grapes, fruit juices and other nonalcoholic beverages.

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SWAPPING URGED TO SOLVE HOUSING SPACE PROBLEMS

West Berlin IWE TAGESDIENST in German No 125, 15 Aug 86 pp 1-2

[Article datelined IWE Berlin 15 Aug 86: "GDR State Organs Press for 'Better Utilization' of Living Space"]

[Text] In order to better "utilize" living space in the GDR, the local state organs are to arrange for more exchanges of housing accommodations. As ORGANIZATION, the journal for employees of the state organs, now stresses, problems of housing space could be solved in this manner without employing more societal resources and without constructing additional buildings. For that reason, it must be an important concern of state organs, factories and social organizations "to promote and develop citizens' willingness to trade housing voluntarily." According to the journal, older citizens in particular ought to be induced to give up their apartments, which are often relatively large, and to move into smaller ones. Upon request, the expenses could be borne by the state budget. Factories, too, could make incentive payments up to a limit of 700 marks to arrange apartment exchanges favoring workers who have housing problems. The journal pointed out that organs of the state were obligated to approve every apartment swap leading "to better utilization of underoccupied living space."

Recently, community apartment exchange offices have been operating in almost all cities in the GDR. They are specifically supposed to promote apartment swapping to "better use the capacity" of living space. To achieve this, the employees of these central offices and staff members of local state organs are supposed to have "discussions" with tenants in "underused" apartments, to induce them to move into smaller apartments. In the kreis city of Fuerstenwalde (Frankfurt/Oder bezirk), for example, smaller and larger apartments for more than 330 renters were arranged for in 1985. As Klaus Hinz, the chairman of Fuerstenwalde's Permanent Commission on Housing Policy, announced, "even more discussions with affected tenants" were held. In order to increase the readiness of tenants in "underutilized" apartments to swap residences, community moving services in many cities undertake to carry out the relocations. The moving service is already operating in all the city bezirks in East Berlin.

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BRIEFS

INTERNAL CHURCH CONFLICT NOTED--The congregational commission of the GDR church federation has affirmed that there are some deep-seated tensions between Protestant congregations in the GDR and church groups "which challenge their church with their particular topical interests." The commission named "the question of commitment" as a typical point of conflict. There exists, it said, "the absurd situation" of the groups and the church levying mutual demands for commitment on one another. What often makes it difficult for the congregations and church leaders to deal with the groups is the fact that within the groups there is often not the slightest comprehension of the institutional and ideological aspects of commitment, while the groups, as concerned parties, make radical demands for personal commitment (agreement in thought and action). To be sure, it must not be overlooked that most group members had been educated in a system "in which everything depends upon institutional and ideological commitment." That means that credibility had to a large extent been lost. That the groups had now rediscovered that genuineness and demanded it made their very touchy reaction to every demand for the other two forms of commitment understandable. It is obvious that no rapid resolution is possible in this conflict. In the commission's view, this is "however, not desirable, either," since productive tension is being expressed in this conflict. [Text] [West Berlin IWE TAGESDIENST in German No 124, 13 Aug 86 p 2] /8309

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